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Original Articles.

ENTERIC FEVER IN INFANCY.

BY WILLIAM B. NOYES, M.D.,

NEW YORK.

THE recent epidemic of typhoid fever in Montclair, N. J., arising from a polluted milk supply, developed an unusually large proportion of cases in young children. We are so apt to consider typhoid a disease of older children and adults, that cases occurring in earlier infancy have a fair chance of not being diagnosed unless occurring in connection with other cases. Northrup, in his long experience in the Foundling Asylum, among ten thousand cases has never had a case of typhoid, and he has never seen a case under two years in his entire experience. Huber has seen but three or four cases, Holt has seen no cases under sixteen months, Prudden has seen nothing of it in a pathological way, and others of large experience have seen little of typhoid during the first two years.

The first case I wish to report is one which I followed very closely during its entire course, and can vouch for its absolute accuracy.

CASE I.—A. G. N——, eleven months of age, a healthy male child of somewhat nervous temperament, of healthy parents, with no tendency to tuberculosis or any other disease. Had suffered from scarcely any of the ordinary diseases of childhood. He was taken to Montclair for a visit of ten days soon after weaning, and was fed on milk diluted with barley-water, not boiled or sterilized. He rapidly improved in health during these days. Soon after his return to the city he became fretful, restless, and had a slight fever attributed to his "cutting teeth." When I saw him first, except for a slight angina and a temperature of 102° F. in the evening, there was nothing characteristic or positive in his condition except the probability that he was developing something. For two days he improved, though still with a moderate temperature. On the next day he had a roseola, which disappeared in a few hours.

March 27th.—His temperature was 102.6° A.M.; 103 8° F., P.M.; and for the first time he appeared very sick. Moderate diarrhœa with colicky pains, straining at stool. Tongue coated. Vomiting occasionally.

Diagnosis, gastro-enteritis. Treatment, a mixture of hydrochloric acid, pepsin, and bismuth.

March 28th.—Temperature, 102.6° to 104° F. Moderate diarrhœa with colic.

March 29th.—Temperature, 102.6° to 103.4° F. Diarrhœa with frequent stools of a very foul odor. Tongue coated white; tip and sides red. Lungs gave physical signs of bronchitis. No angina. Slight dulness under the left scapular. Breathing rather high-pitched and rapid. Very fretful. Hands brought frequently to the head as if suffering pain. Pupils equal. No other definite symptoms.

March 30th.—Temperature, 101.8° A.M. to 102.8° F. P.M. Condition somewhat better. Lung symptoms less marked.

April 1st.—Temperature, 102.2° A.M., 103° F. P.M. Patient being in better condition, it was decided to move him back to the country for a change of air, and to escape suspected plumbing. No bad results from the trip. Dr. H. B Whitehorn, of Verona, N. J., after this time associated with me in the case. During the two weeks which had elapsed since he had left Montclair, about fifty cases of typhoid fever had developed, and about this time it was publicly recognized that the origin of every one of these cases was due to one cause alone, the polluted milk served to the families of all the cases by one dairyman, G——, who had two cases of typhoid in his family one month before, and had infected his well, and used the well-water to wash the cans and bottles. The baby had fed for ten days on this milk. The combination, therefore, which now appeared before us, of a high continued temperature during the past week, the coated tongue, with clean margin, some tympanites, all this pointed directly to a diagnosis of typhoid. The stools, which, on a napkin, appeared similar to an ordinary stool in diarrhœa trouble, examined in a vessel were not unlike the typical pea soup discharges.

April 2d.—Temperature, 104° F.; pulse, 160; respiration, 25; stools, 4. Rose spots first seen on abdomen and chest, very marked, disappearing on pressure; very distinct when bathed. Patient coughed occasionally and vomited once or twice. Another case of typhoid in the family, the nurse of the baby, who had used the same infected milk, diagnosed at this time.

April 3d.—Temperature lower, 103° F.; pulse, 160; respiration, 25. The diet, which had consisted of sterilized milk and barley-water, was not agreeing well, vomiting and diarrhœa being troublesome. Changed to a combination of Pasteurized milk, lime-water, and cream, which was afterward well borne.

April 4th.—Temperature, 101.5° to 102.5° F.; pulse, 150; respiration, 35. Occasional coughing; baby very restless, giving signs of pains in the head.

April 5th to 7th.—Patient doing well, restless at times. Temperature reached 100° to 101° F.

April 8th.—Baby still fretful and cried occasionally with a sharp shrill cry. Some undigested milk in the defecation.

April 9th.—Baby slept fairly well, nervous when awake, same shrill cry as before. Temperature arose from 100.2° to 104° F. Pulse, 150; respiration, 27. It was noticed that he held his head drawn back and made continual motion with his hand as if to grasp some object. Pulse feeble, extremities cold and somewhat cyanotic. Under vigorous stimulation the condition passed away.

April 10th.—Temperature, 102.6° to 103° F. Pulse over 160. Patient somewhat better, treated for tendency to convulsions by sedatives, and systematic heart stimulation by means of champagne and minute doses of heart tonics.

April 11th.—Temperature, 101° to 104° F. Pulse, 160 to 180; respiration, 30. A condition of irregular pulse and cyanosis was noticed which reacted to heart stimulation. Condition of rigidity of the neck, opisthotonos, general hyperæsthesia, inco ordination of eyeballs, peculiar cry, with occasional convulsive movements of the hands, became now very marked. Dr. Huber, of New York, called in consultation.

April 12th.—Condition of patient very poor. Temperature, 102.4° to 104.8° F. An irregular feeble pulse and great restlessness calling for careful heart stimulation. Urine carefully examined, no trace of albumin found. A third case of typhoid fever in the family developed at this time.

April 13th.—Temperature, 102.2° to 103.4° F. Respiration, 30 to 40 Rapid and shallow. Pulse 152, slightly irregular. One very bad spell in the afternoon,

the most serious attack of collapse thus far, with cyanosis and faint pulse, checked by vigorous stimulation and high hot enema.

April 14th —Temperature, 101.5° to 102.8° F.; pulse, 152 to 110; respiration, 55 to 53; difficulty in getting him to swallow anything except champagne, which he took readily. At times the convulsive movements and symptoms of heart failure.

April 15th.—*Statu quo.* Temperature, 101° to 103° F.

April 16th.—Quiet day until a severe collapse in the afternoon, which was nearly fatal. All forms of stimulation were used from 2 to 6 P.M., including artificial respiration, oxygen, electricity, and other agents, without response. Vomiting of a greenish-brown fluid. A combination of tincture of musk, aromatic spirits of ammonia, spirits of camphor, and a one per cent. solution of nitro-glycerine, one minim of each every five minutes in the mouth by a medicine dropper, was followed by improvement and restoration to a fairly good condition.

April 17th —Temperature, 104° F.; pulse, 152. Convulsions and collapse at 5 A.M ; died from heart failure and respiratory paralysis, 10 A.M.

Of 115 cases of typhoid and similar cases occurring in Montclair and vicinity, where the infected milk was sold, 7 were reported of three years of age or younger, all having been fed on this milk.

Case II.—Reported by Dr. Smith. Girl, aged three, previously healthy, had subsisted entirely on the milk from the G—— dairy. When first seen, March 12th, had diarrhœa, tympanites, eruption, and all the symptoms of typhoid. The case ran an uneventful course and terminated after two weeks.

Case III.—Reported by Dr. Brown. B B——, aged eighteen months. Female, one of three children, aged one and a half, three, and five years, respectively, who were all attacked with typhoid; sick about twenty-eight days, with bronchial catarrh, high temperature, very fretful, constipated; no rash, mouth, or nervous symptoms; diagnosis, typhoid, on account of the epidemic.

Case IV.—Reported by Dr. Newton. H. B——, aged eleven months. Male. Treated from April 1st to April 11th; entire illness, sixteen days. Eruption present, eight to ten petechiæ noted. Temperature about 102° F. Some tympanites. Moderate diarrhœa. Yielded readily to a diet of boiled milk and pepsin. Dr. Newton was first called in to see the patient on account of sore mouth, and found an aphthous condition of the mouth, gums sore and bleeding. Tongue had a heavy brownish-white coat. Breath offensive. Colicky pains until relieved by calomel. Patient had an uneventful run of fever and short convalescence; never vomited, and never refused his bottle.

Case V.—Reported by Dr. Wilson, of Bloomfield. Infant, aged thirty months. First seen about April 25th. Sick two weeks. Eruption present. A mild case.

Case VI.—A boy, under three years, reported by Dr. Shelton, of Montclair, suffered from typhoid at the same time that a brother, aged five years, and a sister, aged six years, all having been fed on the infected milk. Fever lasted four weeks, varying from 100.5° F. A.M , to 103° to 104° F. P.M. Temperature curve fairly typical. Eruption present. Extreme restlessness and tendency to scream out suddenly noted. The pulse generally 128, at times intermittent. Distended abdomen, considerable flatulence at times. Frequent offensive stools, somewhat formed, with greenish particles. Urine negative. Occasional coughing. Otherwise uneventful course and recovery. The case of the girl, aged six years, was exceedingly severe, with obstinate constipation for many days, great prostration, emaciation, and bed-sores. Temperature reaching 104.5° F. the second week. Great restlessness, coughing, delirium, abdominal pain, and offensive breath.

Case VII.—Communicated by Dr. Brown, of Montclair. Child, aged three years, very sick for twenty-eight days. Sister of Case III. Temperature running from 103° to 105° F. for some time. Marked nervous symptoms for several days. Great restlessness, tossing its head from side to side. Rigidity of muscles of the neck. Opisthotonos. Almost complete blindness for five days, strabismus at times, hydrocephalic cry. Tympanitic abdomen, no eruption, no urinary symptoms, tongue coated and moist. Picked at its nose until the nose became raw. Case recovered under treatment of bromides and phosphoric acid. Constipation was marked. Dr. Brown has seen six cases of clear typhoid, under five years, in this epidemic, three under three years of age. He recalls in previous years a number of cases with a high fever running for several weeks, with constipation more frequently than diarrhœa, no noticeable rash, which he now considers, in the light of his experience gathered in Montclair in the recent epidemic, to have been undoubtedly enteric fever.

Case VIII.—Reported by Dr. Newton. E. B——, girl, aged two and a half years. Sister to Case IV. Actively sick about one week, with temperature reaching 103° F., lowest 98° F. Eruption; no diarrhœa. Treated from April 6th to May 5th. An exceedingly mild and uneventful case. An older sister of this case, aged seven years, also sick with typhoid fever, with a maximum temperature of 104° F. Excessive eruption for two weeks. At one time one hundred and fifty petechial spots on body and limbs.

We have given our own case in detail, not because it is the youngest case on record, for it is not, but the cases on record usually quoted are too abbreviated to be entirely trustworthy. There are cases quoted by various authors occurring soon after birth and during the first year. Pregnant mothers contract typhoid, and give birth to infants who develop symptoms of typhoid a few days later. Eichhorst mentions the following examples in early infancy: 1. Found twice by Charceley in the new-born. 2. Hastelius: In a fœtus taken dead in the eighth month from its mother, who had died from typhoid, there was found splenic tumor and marked infiltration of intestinal follicles and mesenteric glands. 3. Neuhaus has found typhoid bacilli in the organs of a fœtus. 4. Chantemesse and Vidal found it in the blood of the placenta, and proved that the typhoid bacilli could be transferred to the fœtus by experiment. 5. Eberth in the heart and in the fœtal membranes and placenta, expelled in the third week of an attack of typhoid. 6. Hildebrand demonstrated them in the spleen, liver, mesentery glands, and nervous system. 7. Reher made successful cultures from the fluids in the liver of a fœtus.

The youngest case recorded contracting the disease itself is at the age of four and a half months. Reported by Ogle in *The Lancet*, 1892. After a week of fretfulness, fever, and indefinite gastro intestinal symptoms, the case yielded, on autopsy, swollen and reticulated Peyer's patches with ragged ulcers, partly ulcerated solitary follicles, enlarged mesenteric glands, and enlarged and softened spleen.

Earl, of Chicago, reported a case, five months four days, with fever, diarrhœa running a mild course like an innocent gastro-enteritis. Finally, after suddenly developing symptoms of collapse and symptoms strongly resembling peritonitis, the infant died, and was found to have swollen solitary follicles, partly ulcerated Peyer's patches, and enlarged mesenteric glands. Peritoneum normal.

Murchison showed intestines of an infant of six months to the London Pathological Society, which had been attacked with typhoid at the same time as his mother, and had the typical lesions of typhoid in a marked degree.

Henoch reports two cases, at six and seven months, with diarrhœa, splenic tumor, bronchial catarrh, otitis, somnolence, characteristic fever curve. Autopsy showed very slight changes, slight swelling of single mesenteric glands, one Peyer's patch swollen. He pronounced the cases as undoubtedly typhoid.

Abercrombie described a case in an infant of six months and one at seven months, with autopsy yielding typhoid lesions. Shadler narrates a case of a seven

months' infant whose mother died about the same time from typhoid.

England[1] quotes in detail a case at eight months, with vomiting, diarrhœa, tympanites, enlargement of liver and spleen, rose spots, and fever for three weeks.

Fuller, *The Lancet*, 1892, a case at nine months characterized by diarrhœa, headache, continuous fever, not over 102° F. for ten days, tympanites, pain on deep pressure. Autopsy showed the typical lesions of typhoid. Long[2] reports in detail a case, of one year, with typical typhoid symptoms

Dr. Huber saw two cases some years ago; one, an infant of eighteen months, the other, two years and six months, both occurring at the same time with other cases in the same family. Indefinite symptoms, but diagnosis clear from the presence of other cases.

Northrup had a case of a child two years of age, in the Presbyterian Hospital, who caught typhoid from its mother who was sick at the same time. The eruption and ordinary symptoms of typhoid were present. The patient made a prompt recovery.

Jacobi has seen many cases of typhoid in infancy.

If these cases are authentic, and there is little doubt that they are, we cannot help thinking that we have before us a disease, rare not because it does not occur, but rare because it is not recognized when it does occur. Henoch states his firm belief that the greater part of cases formerly called gastric fever (febris gastrica remittens) are really typhoid. The "febriculæ" so frequently mentioned in text-books, and vague intestinal disorders so often seen in clinics, with little systematic study of their temperature, are very often probably abortive typhoid fever in their natures, terminating between the tenth and twentieth day with absorption of inflammatory products and no ulceration.

Vogel reports, out of 1,017 cases, 7 under one year; Montmellen, out of 295 cases, 15 under two years; Henoch, out of 280 cases, 8 under two years; Earl, out of about 40 cases, 7 under five years. The undeveloped condition of the glandular structure of the intestines, as urged by some writers, might vary the pathological changes and symptoms, but cannot render infants of any age proof against infection, if they drink any infected water or infected milk, or use infected bottles, or are in close contact with typhoid patients.

In the prodromal period symptoms are not pronounced. The onset will, in most cases, be so insidious that it must be a number of days before a correct diagnosis can be made with any degree of certainty. If there is diarrhœa, a gastro-enteritis or entero colitis will explain all the symptoms that have yet appeared. If there be actual constipation, or merely occasional movements consisting of somewhat altered or putrid stools, a diagnosis of ptomaïne poisoning from some undigested fermenting substance in the intestine will explain all the symptoms. This is not really a false diagnosis, it merely does not state what is the bacterial agent that causes the ptomaïne poisoning.

Donkin states that 24 out of 62 of his cases in children showed a more definite onset of the disease than in adult life. Headache, shivering, vomiting, pain in the belly, back, or legs. Henoch says that it is rare to begin with a chill. Brown, of Montclair, has noted in several cases a rather abrupt commencement.

The fever in the cases occurring in infancy is apt not to present a typical curve at first, for there are so many causes that influence the temperature of a child that would not affect an adult. The fever may be moderate throughout, or it may reach a high point early, and the original diagnosis be changed solely because the temperature is too high and too continuous to be caused by a simple enteritis.

Two distinct periods that may be found in the temperature of an ordinary typhoid in an adult: (1) disturbance due to the typhoid bacilli, causing a sub-continuous fever; (2) disturbance due to the formation and separation of intestinal sloughs, causing a remittent fever, are apt in early childhood to be varied because the second element is imperfect, short, or often entirely absent, due to the fact that the intestinal lesions frequently undergo resolution without any ulcerations (Keating).

Garlock[1] states that the process in Peyer's patches is generally limited to the lymphoid cells and is superficial. The proliferated cells undergo fatty degeneration and are absorbed without formation of ulcers. A fever after fourteen days is due to absorption through open ulcers. And few children with such ulcers can escape a secondary fever.

The milder degree of intestinal lesions, and especially the absence of ulcers, would make us expect that we should find less abdominal tenderness, less pain, less diarrhœa, and less tympanites than in the adult, which all recorded cases show to be undoubtedly true. Gerhart states that the swelling of Peyer's patches shows itself earlier than in adults, and is seen with greatest frequency near the ileo-cæcal valve, often reaching higher. This swelling is sufficient to cause the patches to protrude out beyond the mucous membrane in projections that are frequently the seat of excoriations and little ulcers. These may later develop deep ulcers and sloughs, as occurred in twenty-nine out of his forty-four examinations. On the other hand, this frequently clears up without ulceration. Henoch holds that the ulcers are comparatively rare and of small size. He found them in 13 out of 23 autopsies of his 239 cases in children. He says that when they occur they are generally small, shallow, and instead of occupying the whole of a Peyer's patch occupy merely a part. The Peyer's patches may form what he calls "plaques molles," a condition of fatty degeneration of the new-formed cells resulting finally in resolution, or they may form hard plaques, indicating an infiltration of the entire gland tissue and tissues beneath, which will ultimately result in the formation of ulcers.

Granted that typhoid fever is commoner than we have realized, what symptoms will enable us to recognize one of these cases or make an early diagnosis?

1. Any long-continued fever that will not yield to appropriate doses of quinine is suspicious, especially when higher in the evening, and when no existing conditions of the throat and lungs or bowels suggest an explanation. A temperature remaining continuously high, and yielding, if systematically taken, a fairly typical typhoid fever curve after a few days. Jacobi lays stress on the probability of typhoid with a continuous high fever, which is well borne by the infant.

2. Gastro-intestinal disorder, especially when a decided tendency to constipation is present; putrid stools of an especially offensive character and odor when there is any diarrhœa. If these are only seen on the diaper they will not look very different from the green spinach stools that occur in other diarrhœas, because the fluid is soaked up on the napkin. If seen in a vessel, the thin, semifluid character, greenish particles, and all the characteristics of a typical "pea soup" stool are present. If there is trouble with insufficient digestion of food, the lumps of undigested casein will somewhat change the appearance. The lack of acute symptoms of an intestinal nature is more characteristic than violent symptoms. Vomiting may or may not be present.

3. The first absolutely sure symptom is the appearance of rose spots, which may come early or late, or in two or three crops, and are said by some writers to occur quite as regularly as the rash in scarlet fever. Brown, of Montclair, among his six cases has seen several with slight rash or no rash at all. Earl found them in all his cases but three.

Roseola, or sudamina, or other indefinite rashes, may be present at any stage, and possibly confuse diagnosis.

4. Symptoms of headache, which a baby will indicate by rubbing or picking at its head, nose, or ears, or burrowing its head back in the pillows, but not by active head symptoms which would characterize meningitis. As

[1] Canada Medical Record, vol. xx., p. 25.
[2] Archives of Pediatrics, 1893, p. 53.

[1] Transactions of the New York Medical Association, 1891.

the disease goes on these head symptoms will frequently increase.

5. A tongue coated with yellowish or brownish-white fur, generally red at the tip or sides. It may be so heavily coated and the entire mouth so affected that a condition resembling aphthous stomatitis may be present. In the case reported by Dr. Newton this was the symptom that first caused the physician to be called in; but the condition of sordes is not as frequent in infants as in adults.

6. Enlarged spleen is very important when found, but not always to be accurately demonstrated in a young child, especially if tympanites is present.

7. Tympanites, sometimes excessive, but in most recorded cases very moderate.

8. Bronchitis seems to be almost as regular a symptom as in measles, agreeing with the pathological changes demonstrated by Uffelman of swelling and redness of bronchial tubes, but the breathing is, later, too superficial to make râles.

9. There may be angina. I have seen it twice, once in the present case, and once in an older typhoid patient. Henoch says that it is not uncommon. When found it is apt to confuse rather than help the diagnosis.

10. The stools, when carefully examined very early in the disease, may contain typhoid bacilli, but this has very rarely been detected in most of the recorded cases. If it could be, it would be of very great importance as an absolute means of diagnosis, but after the second week it is very rare to be able to find them.

When the diagnosis is made from the spots, spleen, tongue, and temperature, as the cases in children advance, several variations in typical symptoms of adults are to be expected. Ileo cæcal tenderness or gurgling is hard to satisfactorily determine, and when present is worthless because it can be found in various other diarrhœal diseases in children. The hard, dry tongue, the swollen tongue, or excessive sordes, are rarer in children. Hemorrhage or perforation is very rare. As a whole, the severer symptoms common to adults frequently fail.

The nervous symptoms are interesting and will often confuse the diagnosis from the beginning, suggesting acute, subacute, or tubercular meningitis, according to their severity, especially if the previous history of the child and family is suspicious. The regular occurrence of headache, even in the youngest, has been noted; and though more difficult to detect in the very young infants, will, in most cases, be suggested by the actions of the child.

Intestinal cases present quite a variety of reflexes in the head; for instance, a constant picking of the nose, which was noticed from the beginning to the end in my own and in other cases, instead of being a local irritation is a reflex, which Louis Starr called a regular symptom of gastric and intestinal irritation. It occurs also in tubercular meningitis Henoch says it is an early typhoid symptom, but may last throughout. Picking at ear may accompany otitis.

As stated by Keating, in infants and young children nocturnal delirium, which an adult would present in early weeks of typhoid, is accompanied, or more often replaced, by sudden sharp and prolonged outcries, with great restlessness or excitement not easy to pacify. This will resemble a hydrocephalic cry, and is again a very startling symptom. Extreme restlessness is almost sure to occur. Earl also calls attention to continued crying at night, stiffness of the neck, jerking of the muscles. There may be apathy or a condition of coma, when the muscles become lax and the movements of the eyes are no longer co ordinated. Blindness may occur as in Case VII.

In spite of all these symptoms real meningitis, as a complication, though it can occur, is exceedingly rare. Henoch has never seen a case. But the symptoms I am about to relate are very much like the symptoms of meningitis.

In my case, about the end of the second week, following a little trouble in digestion, vomiting occurred and general irritability increased. Temperature rose four degrees, and there developed a stiffness of the neck and back, which became after a time a condition of opisthotonos. There was inco-ordination of eyeballs and a peculiar movement of both eyes upward and to the side, great hypersensitiveness to sound, light, and touch, especially touching the head. Irregular and at times convulsive movements, especially marked in the left arm and leg, and continued twitching of the fingers. The baby cried out frequently in a new and strange way, and the pulse became very rapid, 160 to 180, irregular and occasionally intermittent. Respiration rapid, irregular, and sometimes sighing. All this pointed in my mind almost certainly to an acute meningitis. Dr. Huber, who saw the case at this time, while agreeing absolutely with the original diangosis of typhoid fever, held that the presence of an active meningitis might be ruled out for the following reasons: 1. The fontanelle was depressed, not elevated. 2. The child was bright enough to notice things. 3. No tache cerebral. 4. No boat-shaped abdomen. 5. The vomiting had not been expulsive. 6. The photophobia and hypersensitiveness to light and sound were less than one would expect in an acute meningitis. The entire condition, acute as it seemed, he held to be a passive congestion in the vessels of the brain caused by the weak heart, and held that heart stimulation already begun would remove these symptoms, which actually took place within a few hours.

I have mentioned this in detail because it shows how far an extreme case of the ordinary nervous symptoms of typhoid can simulate meningitis. Henoch reports a case of tremor and stiffness of the extremities, constant jerking of the same, which showed on autopsy no brain lesion. Also one where there was contracture of both legs and right arm, continued grinding of the teeth, yielding at autopsy only slight changes. Also another case of a girl, four years of age, who showed distinct stiffness of the neck, later actual opisthotonos, and marked contracture of the neck, with grinding of the teeth. Autopsy showed no brain lesion. Foster reports a case of trismus and opisthotonos which lived. Brown's case (quoted as Case VII.) had opisthotonos, blindness for several days, and numerous other severe brain symptoms, and recovered. Among other nervous symptoms exaggeration of the knee-jerk has been noted.

Marked and persistent tremor sometimes occurs, and is said by Donkin to point to a deep ulceration, a point much emphasized in typhoid of adults by W. G. Thompson. No lesions of meningitis were found in these cases, and cases resembling meningitis, which occur occasionally in hospitals and die, on autopsy, instead of the lesions of meningitis, frequently fail to show any change in the brain or membranes. The cases of acute maniacal delirium with high fever and rapidly fatal termination which at times occur, have no change in the tissues outside of the blood-vessels. That there has been some cause and some lesion is certain, but no exudation of serum, fibrin, or pulse, or even marked congestion, is to be found. There is left the probability either of temporary changes in the blood-vessels and circulation which have left no traces, or more probably, some very subtle delicate change that our usual methods of preparing brain specimens do not detect. As strychnine affects the cord centres, so, I believe, the ptomaïne of typhoid fever may affect the brain centres.

It may be asked, in view of these extensive nervous symptoms, how one can be certain that his case is not one of epidemic cerebral spinal meningitis, which may begin like typhoid, run many weeks with a rather similar course, with vomiting, hydrocephalic cry, rigidity of the neck, and opisthotonos, and all those meningeal symptoms mentioned, an indefinite eruption, and similar eye symptoms, strabismus, photophobia, inequality of pupils, and even blindness. The resemblance is certainly great, but the temperature curve is not characteristic, generally not over 102° F., and there is no regular evening rise. Pain in the back, limbs, calves, and thighs are more marked in the

epidemic meningitis. The eruption, if present, is more apt to be like herpes than a rose spot, as in typhoid. The pulse is almost invariably slow instead of rapid, and does not follow the variations of the temperature as in typhoid. There is apt to be a nasal catarrh, this being the method of entrance of the bacterial agent in the epidemic form, probably. Joint complications are also apt to occur.[1] The progress is constantly toward the fatal outcome, with paralysis, either hemi- or mono- or paraplegia, while in typhoid recovery is to be looked for in a fair proportion of cases.

Tubercular meningitis, like the epidemic form, resembles typhoid, but almost always has an antecedent tubercular trouble in some other organ, and a more gradual onset. The temperature is seldom high, averaging 101°, and reaching 102.5° only near the end. The vomiting is violent, frequent, and propulsive, and occurs without reference to food taken. Pulse slow and irregular. Respiration sighing, abdomen markedly boat-shaped, and the skin may develop an erythema. At first there are marked and severe brain symptoms without special "typhoid symptoms." Later a "typhoid state" is sometimes developed with a rapid pulse and diarrhœa that might be confusing if compared without knowledge of previous history. As a rule, the symptoms will be first those of a general meningeal irritation, then localized brain and meningeal irritation, and finally symptoms of absolute paralysis of different brain areas, becoming more and more complete until the vital centres are involved and death ensues.

We have laid stress on the low pulse in these two forms of meningitis. In typhoid the pulse should vary from 90 to 120, according to the height of the temperature. It has been observed from 152 to 180 and irregular, in cases that afterward recovered.

The heart is commonly affected more or less in typhoid in infants, and Donkin states that a modification of the first sound is generally found in most cases in the second week, and that observation of the radial pulse alone is not enough to show how the heart is working. In my case two very alarming spells of heart failure and collapse followed two very careful attempts to make an examination of the back of the chest. I cannot too much lay stress on the necessity of keeping the little patient continuously on the back, giving him the benefit of the doubt and avoiding any risk from extensive physical examinations, however careful, extensive bathing, or any unnecessary changing of the position. Let objective symptoms give information of any new condition developing in the lungs, always remembering that both lobar pneumonia and broncho-pneumonia are rare complications. Hypostatic pneumonia or œdema of the lungs must be looked out for and avoided by the treatment if possible. Nephritis or other urinary symptoms are rare.

The duration of the disease is variable. In 190 cases of Henoch, 11 terminated between the seventh and ninth day; 36 cases between the tenth and twelfth, inclusive; 45 between thirteenth and fifteenth; 40 between sixteenth and eighteenth; 25 between eighteenth and nineteenth day; 39 between twentieth and twenty-third day; 14 between twenty fourth and thirtieth; 6 between the thirty-fifth and forty-fifth day.

Collapse and sudden death are rare except in the graver cases, and owing to the less extensive lesion in the intestines many children do well.

In treatment a conservative course will commend itself. Tub-baths will not be well borne in most cases, though sponging rather than antipyretics will best bring down the temperature. The task of choosing a food that will be digested and leave no undigested masses in the stools, is very difficult, but must be very carefully studied and watched, or there will be trouble. Brown suggests constant under-feeding, or a starvation treatment. A mineral acid and a little bismuth may be all the drugs needed in favorable cases, in others bromides or other mild sedatives for the nervous symptoms, and drugs by rectum rather than by the mouth if there is constipation, will be valuable. For the heart symptoms, frequently repeated doses of champagne were found exceedingly valuable, and were well taken by the patient. Diffusible stimulants, like ammonia and camphor, were quite as effective as the more powerful ones, digitalis, strychnine, or sparteine, though all were tried in appropriate doses at certain times. Heat over abdomen, and high hot enemas, were always prompt and efficient means of counteracting collapse until the last. In a very severe collapse with cyanosis, fluttering feeble pulse, and failing respiration, when all other heart stimulants, including oxygen and electricity, had failed, at the suggestion of Dr. Whitehorne a combination of spirits of camphor, aromatic spirits of ammonia, tincture of musk, and the normal liquid of nitro-glycerine, of each one minim, dropped on the tongue with a medicine dropper, was followed by a change from what had been almost a moribund condition to restoration of life, fair pulse, and a favorable condition for half a day. The preparation was absorbed from the mouth and acted quite as promptly as a hypodermic and with far less shock and irritation to the infant. In an experience with cases of collapse and shock by no means small, the writer has never seen such a prompt reaction from so desperate a condition.

Two other suggestions will be made as a result of the study of these cases: 1. Sterilize or Pasteurize all milk used for young children, and boil all water during the early years. 2. In all cases of a diarrhœal nature in children, disinfect the stools—a measure indicated if it is only a simple summer diarrhœa, since the more recent studies in its bacterial origin and doubly indicated from the possibility always present that these cases may be irregular or hidden typhoid fever.

[1] Berg: Archives of Pediatrics.

VARIX OF THE RIGHT AURICLE ENDING IN RUPTURE.

By WM. G. SMITH, M.D.,

STURGIS, SOUTH DAKOTA.

Considering the rarity of the above-named affection and the interesting features of its development, I will detail the progress of the disease as it developed in a patient under my care.

Louis L——, of French Canadian parentage, born at Quebec, aged fifty-six, and by occupation a teamster, a married man although not living with his wife for several years prior to his last sickness.

Mr. L—— gives a history of having the diseases of childhood with no ill effects following the same. He was an excessive tobacco user and an excessively hard drinker in former years. He denies any venereal trouble and no history of any hereditary disease in ancestors can be elicited.

The above disease commenced on June 12, 1889, while Mr. L—— was making a trip from Sturgis to Deadwood, S. D., on a rainy day when the roads were very muddy. His wagon broke down, which compelled him to do some very heavy lifting. After one strenuous effort he was suddenly taken with acute pain and oppression in the mid-sternal region. He continued his trip to Deadwood and sought advice, as the pain was very severe and as he was at the same time suffering from the effects of a cold. Treatment consisted of cough mixtures, anodynes, and counter-irritations.

On the following 16th of June he wrote me to send him some medicine for pain in the chest and a cold. I prescribed an expectorant mixture containing an anodyne, and advised his return to Sturgis if he did not soon get relief, so I could make an examination.

Some three days later he reported at my office, still suffering from the acute pain in the chest. I made a careful examination and found the acute pain located over the region of the right auricle but somewhat diffused in area. I could find no increased dulness on percussion. The heart beating was rapid and tumultuous, the pulse at the wrist was compressible, and the artery gave

somewhat of a cord-like feel, and the sensation of high tension or blood pressure.

The urine was normal in every respect. There was some oppression in the chest and slight dyspnœa, which I took to be of nervous origin due to tumultuous heart action. I was unable to be positive in my diagnosis, and treated on the symptomatic plan. Gave a hydragogue cathartic with the effect of lowering blood-pressure and unloading the bowels. Gave fluid extract of digitalis to quiet tumultuous heart beating, and an anodyne, as the pain showed great obstinacy while upon the above treatment.

I was not satisfied, and upon further examination and meditation I came to the conclusion that the exertion had produced a strain on the aorta; and fearing aneurism, I put my patient on iodide of potash and Squibb's fluid extract of ergot, informing him that he would likely be sick some time, and instructed him to drink as little of liquids as possible, not to overload the stomach, desiring in this way to keep the blood-pressure as low as possible. Also advised him to avoid mental excitement and physical exertion.

I was favored in a few days by the pain's decreasing, the faintness and dyspnœa disappearing, and in four weeks' time my patient felt in his usual good health and resumed his ordinary occupation. The result caused me the more to doubt my fear of aneurism and left the real nature of the disease in obscurity, for previous to this sickness my patient had always been very robust and possessed an iron constitution, so to speak.

A year later, in June, 1890, Mr. L——, for the first time since his previous treatment, returned to my office complaining of the same old pain and oppression in the chest, which he said had been troubling him for the last three or four days. The pain was so severe that I gave him an opiate, and instructed him to return for an examination as soon as he was easier and able to lie quietly. He did so, and upon this examination I found cardiac dulness slightly increased tranversely to the right. Heart action was slower, numbering fifty-six pulsations to the minute, and temperature was normal. There was, however, an increased shock to the impulse beat.

Remembering my former inclination to believe in aneurism I carefully examined, but could get no bruit. I could get no distinct dulness separate and distinct from that of the heart. I could detect what I took to be a tendency to atheroma and I proceeded to my diagnosis by the exclusion method; but was unable to entirely exclude aneurism, and still I was unable to make a positive diagnosis of it, but inclined to that disease, and again commenced my former treatment of iodide of potash and Squibb's ergot, instructing my patient to avoid all alcoholic beverages, to refrain as much as possible from the use of tobacco, to limit his use of liquids, to avoid overloading his stomach and to avoid mental excitement and physical exertion.

I gave cascara sagrada for the bowels, which were constipated, a condition which I must say was very rare, for the regularity of the bowels was very marked even when opiates had to be administered.

During the later part of July, 1890, I thought I detected slight evidence of bulging of the thorax in the mid-sternum region. The apex beat at this time was one inch to the right of left nipple and three-fourths of an inch below a line passing through both nipples.

Auscultation gave negative results, as nothing abnormal could be detected except the increased cardiac force. There was no jugular pulsation, as frequently occurs in tricuspid regurgitation or dilated right ventricle, no buzzing in the ears, no vertigo, but a slight tendency to syncope and a slow pulse, ranging as a rule from fifty-six to sixty to the minute.

This time the pain, weakness, syncope, and oppression did not respond so quickly to treatment, and an occasional opiate had to be administered.

About this time a travelling doctor from Omaha was making monthly visits to the Black Hills and took in Sturgis. The unrest that is so liable to overtake a sick person troubled my patient, and he began to want to know how long it would take him to get well. I told him that in my opinion he would not be able to resume work during the summer. This made Mr. L—— all the more want to try Dr. P——, who was advertising quick cures, no cure no pay. Finally Mr. L—— went to see the doctor, who, the patient said, would agree to cure him for $10 in advance. Mr. L—— offered to put in the bank the $10 subject to the doctor's order in case of cure, but this proposition was not accepted.

My patient did not improve as fast as he thought he ought to under my treatment, and later put himself under the care of Edward J. Sexton, a regular practising physician of ability. In talking the case over later with Dr. Sexton he kindly informed me that his first diagnosis was dilatation of the left ventricle, and he treated him for such; but upon a re-examination he changed his diagnosis to aortic aneurism, and treated him accordingly. The doctor informed me that the pain was so severe and rebellious that he had tried all the anodynes, and the only relief, which was partial, was from morphia.

The disease gradually progressed, the patient being able to walk about, until October, 1891, when he was stricken down with hemiplegia of the left side, lying for several days very near death's door, while stopping with friends in the country.

In January, 1892, Mr. L—— was removed to Sturgis, and as his means of support had been exhausted he became a county charge, and again came under my care, I being the county physician. At this time he was still suffering from hemiplegia, although somewhat improved and able to be up. I put him on tonics containing phosphorus and strychnia, and also made tri weekly applications of faradism, which improved the muscular action.

An examination at this time showed more marked bulging in the right auricular region, and increased dulness, which extended farther to the right. The apex beat was marked and increased in force. There was dyspnœa and a dry senseless hacking cough present. The second heart-sound seemed slightly accentuated; a faint-like feeling was complained of, and the pain, which was described as piercing, tearing, burning, aching, and wearing in character always at the seat of the bulging, passing posteriorly to the upper interscapular region, most marked at the left of the spine, was the most severe symptom, although remitting at intervals, and then returning with increased vigor.

I could detect no murmurs, no jugular pulsation, no bruit, no irregularity in heart's rhythm, no intermittency in heart's beating, no dulness separate and distinct from that of the heart, and no inequality in radial pulses. There was, however, an increased cord-like feeling in radial arteries, and the anterior convex portion of the bulging in the chest was softening, and a pulsating beat was plainly felt on palpation, which gave the impression of transmitted shock and some interference, with vesicular murmurs at apices of both lungs.

Although still uncertain I felt quite positive the disease was aneurism of the aorta, and at that portion beyond the point of the origin of the left subclavian artery, for the reason that there was no inequality in radial pulse. I again resorted to drachm doses of Squibb's fluid extract of ergot with scruple doses of iodide of potash three times a day.

My patient being indisposed sufficiently to keep him in bed, I could see a slight diminishing in the size of the bulging, which I took to be the result of medication; but in a few weeks he regained his appetite and strength enough to be up, and no amount of argument or persuasion would make him keep quiet, and as soon as he began to walk about the bulging began again to increase.

As before stated the severe pain was the most troublesome symptom I had to deal with, and I found that any drug that lowered the arterial tension gave temporary relief. On one occasion my patient came into my office

nearly wild with pain. I had him lie down on the lounge and gave him one minim of nitrite of amyl, and was surprised at the instant relief of the pain. Seeing the quick results, I prescribed a mixture of nitrite of amyl and fluid extract of prun. virg., and for some time it acted admirably; later I also tried glonoin, but it did not act as well as the nitrite of amyl. At a glance one will readily see that the nitrite of amyl antagonized the effect of the ergot so far as it affected the arterial tension, and recognizing this fact my first dose was an experimental one.

In treating the pain I resorted to various anodynes and somniferous drugs, frequently without avail, and had occasionally to return to morphia either by mouth or hypodermically.

I always advised the taking of small amounts of liquids, the avoidance of stimulants, restricted diet so as not to overload the stomach, and thereby mechanically increase the pressure, avoidance of mental excitement and physical exertion.

The bulging gradually increased until no trace of rib or cartilage could be detected by palpation at the seat of bulging, and the walls of the sac became adherent with the anterior chest-walls so intimately that, in making the dissection after death, there appeared no division between the auricular sac and the chest-wall, and the pulsation of the local bulging could be easily seen several feet distant.

Palpation gave the impression of transmitted shock. As the disease advanced the dyspnœa became more marked, due, in my opinion, to the pressure causing imperfect pulmonary circulation and deficient aëration of blood.

There was, at times, slight inequality of the pupils, never well marked. Patient suffered also from an occasional headache. The cardiac dulness gradually increased to the right and the respiration became more laborious as the pressure increased.

There was at no time any dropsy, no inequality of radial pulse, and the cyanosis was slight.

Photograph, Figure 1, was taken early in July,

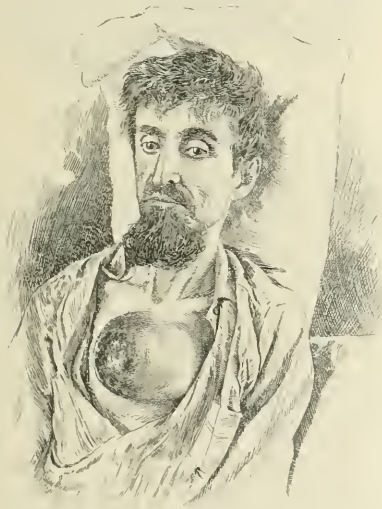

Fig. 1.

1892. In the condition here represented the patient would occasionally have two or three days at a time comparatively free from pain, and then again it would come on in the severest manner, extending to the left shoulder and down the left arm to the finger tips, similar in character to the subjective symptoms in disease of the cardiac valves.

During the last week in July I was called away for a few days, and I had Dr. Ira L. Sanderson, of Sturgis, a physician and surgeon of long experience, formerly of the United States army, attend my patient, as frequently hypodermic injection of morphia had to be administered to allay the pain. After my return Dr. Sanderson informed me that he considered the case as one of aneurism of the aorta.

I continued iodide of potash and ergot for the reason that I thought I had an aneurism to deal with and knew of no better medication. About this time difficulty in swallowing food developed, and the above symptoms continued, gradually increasing in severity.

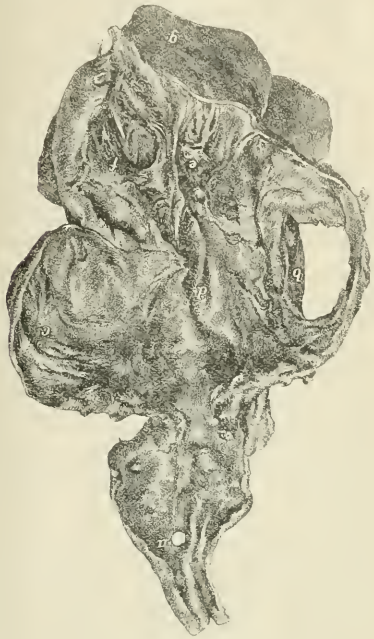

Fig. 2.—Organ laid Open.

In this you can readily see the disease has made greater strides. During the last two months superficial ulceration has already commenced in that portion nearest the right nipple, and its development progressed rapidly considering that only ten days had elapsed since the ulceration commenced.

During this process of ulceration the patient had no rest night or day, morphia having no effect in ordinary doses, and the hypodermic injections were increased up to two grains per dose, and repeated every hour for three doses the day before he died, as rupture seemed possible at any minute and humanity demanded some relief, but sleep was not produced. At my last visit, the day before his death, October 7, 1892, Theodore Haas, a druggist, accompanied me, it being near midnight. I had previously covered up the ulcerated portion of the bulging with a piece of lint smeared over with carbolized vaseline and gave instructions that it should not be removed, but my patient's curiosity became uncontrollable, and while my back was turned he removed the lint, and suggested more vaseline. While applying more vaseline to the lint I heard him cry out, "I am bleeding to death." Mr. Haas had just previously noticed him remove a black object, which was a clot of blood, which acted as a plug in one of the ulcerated holes, and when removed allowed the blood to flow out freely, which it did, spurting probably some two feet for a moment and then gradually lessening its expulsive force.

The blood was venous in character and more regular

in flow than it would have been had the blood been arterial. In half a minute or less another clot filled the opening.

My visits were very frequent during the last few days of his life, and I was at his bedside a few moments before his death, which occurred at noon on October 8, and it was with great difficulty that he swallowed even liquids for the last few days of his life. Death really resulted from inanition, as his inability to eat food had caused marked debility and excessive anæmia.

Thus ends the case of our supposed aneurism of the aorta, and a hasty review of the subjective and objective symptoms, which have been misleading, in which the underlying etiological factors produce appearances not especially peculiar to it, but common to a frequent and well known affection of the blood-vessels, we can usually see wherein our error lay, before we detail the results of the post-mortem examination perhaps would not be amiss.

As in aneurism (intrathoracic) we had pain in chest, even extending to shoulder and down left arm to fingers, and here I would quote from Dr. Walshe, who says, "The absence of symptoms and signs indicative of ordinary affections of the heart and lungs in an individual suffering from persistent anomalous disturbance within the chest, even although he does not exhibit any failure of general health, affords strong motive for suspecting aneurism."

We have in our case the disturbance in the chest spoken of, we have failure of general health, we have dyspnœa, we have some inequality in the pupil, not marked; we have laborious respiration with disturbance in vesicular murmur, we have difficulty in swallowing, we have the hacking senseless cough, although no paralysis of either pharyngeal nerve; we have evidence of atheroma, as shown by hemiplegia; we have a pulsating or heaving expansile tumor, although not distinct from that of the heart; while, on the other hand, we cannot detect any systolic bruit, which is often absent in aneurism. We cannot detect separate and distinct dulness from that of the heart, we cannot detect any inequality in radial pulse.

My mistake in diagnosis was due to a lack of proper consideration being given to the heaving expansile impulse of the pulsating tumor, which was not distinct from that of the heart, and in my case misled me by giving the impression, by palpation, of transmitted impulse, which condition was caused by the expansile impulse being interfered with by the interstitial inflammation, which caused an adhesion of the sacculated portion of the heart to the internal anterior wall of the chest, thereby causing a lessened elasticity, lessening the expansile thrust and producing with the impulse of the tumor a tendency to shock.

I am aware that diagnosis of sacculated ruptures of the heart's cavities, or as some prefer to call them "heart aneurisms" or "heart varices," are frequently not made until the patient reaches the post-mortem table; but nevertheless I now consider this expansile impulse, with a seeming tendency to transmitted shock, very diagnostic of a sacculated rupture of one of the heart's cavities, when its dulness is not distinct and separate from that of the heart's dulness.

One other conclusion I shall draw, and that is in reference to the pain. In aneurism the pain is more frequently first complained of in the shoulder or passing down the arm to the hand, while in sacculated heart cavities, as in valvular disease of the heart, the pain is more frequently first complained of in the cardiac region and then radiates to the shoulder and then down the arm.

We will now look at the heart as it appeared on being removed from the body as shown by photo marked Figure 3. Letter *a* represents aorta; *b*, left innominate artery; *c*, the sacculated portion of the right auricle as represented in Figure 2, by the bulging in the chest; *d*, the right auricle; and *e*, the heart's apex.

Viewing the heart as it is laid open, as represented by photo marked Figure 2. *a* represents aorta laid open; *d*, the left auricle; and *c*, the posterior wall of the right auricle; and the letter *b* intended to represent the anterior wall of the right auricle, and the rupture or hole in the same. Letters *e* and *f* represent the ventricles; and *l*, the apex of the heart.

We find the aorta dilated, so also the auricles; but more marked in the right. There is dilatation of superior vena cava, but not excessive.

Upon examination of the sacculated right auricle from a pathological point of view, I am of the opinion that the disease originated in a local circumscribed fibroid condition of the inner surface of the anterior wall of the auricular chamber, which resulted in new cellular growth, thereby producing interstitial pressure on the muscular fibres causing or resulting in fatty degeneration. There is no doubt but that the whole thickness of the anterior wall of the right auricle at the seat of the disease was affected and the muscular fibres degenerated.

The localized sacculated portion of the auricle, the seat of the fibrosis, presented a glistening fibrous appearance, of a dirty white or nearly grayish color. I believe the fatty degeneration exceeded the development of fibrous

FIG. 3.—Appearance on Removal.

tissue, and as a result the affected circumscribed area softened and thinned at the same time and in this manner the bulging took place.

The fatty degeneration could easily be detected by palpation and inspection, for it presented a greasy feeling even after the specimen had been in alcohol several weeks, as well as a greasy aspect. The fat had increased considerably, but more markedly so in the inner layer of the sac, as manifested by the increased number of oil cells, as shown by examination with the microscope, and every condition present suggested that the limited area of the sac, as represented by the letter *b*, was intensely and uniformly affected, though sharply defined or limited. This limited circumscribed spot was circular, but presents a more elliptical form in photo, caused by the position in which it was held while being photographed.

As a usual rule the ventricles are more often affected than the auricles; indeed some authors doubt that the auricles are ever affected. They are certainly occasionally the seat of fibroid degeneration and their walls may be affected in a limited area, which is sharply defined, and through the entire thickness of the walls, as illustrated in the case before us.

In primary rupture of the heart the immediate cause of the tear is probably an unnatural, excessively energetic contraction of the heart, producing a greater strain upon the fibres than their degenerated condition can resist. This condition of energetic contraction can be brought

about by excessive lifting, straining, or perhaps a violent coughing.

This condition, as can readily be seen, would most often affect the ventricles, as the greater blood tension would there exist during such efforts; but I take it that in a localized, sharply defined, circumscribed fibroid condition, succeeded by fatty degeneration in the auricle in our case, the force being less than in the ventricle, there would be less liability to rupture, or a complete tear through the wall; but the weakened part would partially give way, and in time, considerably longer than in case of the ventricle, a sacculated condition would form, gradually distending, and through pressure on adjacent organs the various symptoms, as in the case before us, would be produced.

As Jenner pointed out, congestion of the walls of the heart is a cause of fatty degeneration of the muscular fibres; but this degeneration is rarely simple—more or less fibroid growth is usually conjoined. In the present case the cause of the fatty degeneration is probably alcoholism, the same being the cause of the atheromatous condition, and I take it as the probable cause of the fibrosis, augmented, perhaps, by the tobacco habit.

In fatty degeneration we expect to find diminished force of impulse and a weak apex beat, together with enfeebled heart action; but in the present case we find the very opposite condition, and I account for this by the fact that our limited area of degenerated muscular fibres was in the auricle, and even in forcible heart action the tension was not sufficient to complete rupture, and not sufficient even to prevent regular ventricular contractions, which have more to do with impulse and apex-beat, when the muscular fibres of the ventricles are not degenerated, than do the auricles.

The energetic effort at lifting, at the first appearance of pain, was probably the immediate cause of affecting the diseased auricle, and no doubt resulted in an injury to the diseased area, thus producing inflammation and local congestion and allowing every excessive increase in blood-pressure to add to the mischief already existing, which gradually progressed until the results as portrayed by the photographs finally developed.

CRIMINAL ABORTION.

Its Evils and Its Sad Consequences.

By MARY A. DIXON-JONES, M.D.,

NEW YORK.

In law the term abortion is applied to the expulsion of the fœtus at any period of pregnancy before the term of gestation is completed.

Abortion, induced at any time, or for any purpose except for the mother's welfare, or for the preservation of the life of the fœtus, is a crime and a murder. This foul taking off has been the cause of the destruction of an uncounted number of children; and has, in unnumbered instances, resulted in the death or ill health of the mother.

Under these two heads I will briefly discuss a few phases of the subject: First, the danger to the mother; second, loss of infant life; and third, as further developing the thought, will give instances of women who have sought to have abortion produced; and finally, will refer to the medico legal aspects of the subject.

As soon as conception takes place the vital forces are summoned to new energies and new activities dormant powers are aroused, and wonderful processes commence. The uterus and whole organism begin preparing for the great work, the growth and development of a human being, to be perfected in the short space of nine months. To interrupt these processes is a shock—a shock to the whole being, the nutritive, nervous, and mental systems; it does violence to the procreative organs, and renders them incapable of ever as efficiently performing their special functions. Subinvolution cannot take place as in the normal termination of pregnancy. This gives rise to multiplied evils, the full significance of which are, as yet, not fully understood. The uterus and its adnexæ, especially, suffer in many respects, swelling from the increase of living matter; then follow enlargement, hyperplasia, various misplacements, inflammations, and fibrous degenerations; in some cases, cancer or malignant growth is the natural outcome; in all, there will result some trouble that, for years, may give distress, suffering, and lasting weakness. Women may not at first show the full sad effects, may even, after repeated abortions, apparently do well; but, though not recognized, grave consequences always follow, resulting ofttimes in disease that may become more and more complicated, more and more dangerous, many times terminating fatally; and always, to some extent, shortening life. Many strong, healthy women have, by it, been made invalids for life, and to it many date the commencement of their sufferings and their continued ill health. Thomas says:[1] "That this criminal practice constitutes a prolific source of uterine disease, no one engaged in gynecology can for a moment doubt." Even the sepsis that is apt to follow may cause rapidly fatal peritonitis, or may induce an incurable disease of the uterine appendages, which is not only a cause of much suffering and ill health, but ofttimes eventuates in subsequent and absolute sterility. Septic inflammation most frequently destroys all functional capability of these organs; and in connection with this I dare assert, and believe the fact can be fully substantiated, infinitely more women have been made sterile by sepsis introduced at abortion, or even ordinary labor, than results from all the cases of removal of the uterine appendages; and this disproportion is vastly increased by noting the fact that in most of the cases where the diseased uterine appendages have been removed, the individuals had previously been rendered sterile by the disease of the named organs. I have known repeated instances where young married women, even in their first confinement, have by some sepsis been forever deprived of the privilege of subsequent maternity, have by this sepsis been made permanently sterile. I have known such repeated and sad instances of this, and so impressed have I been with the fact that I said in an article in the *New York Medical Journal*,[2] that "an obstetrician should be an antiseptic surgeon." As illustration and proof of this we have only to refer to the brilliant obstetric work of many of our great antiseptic surgeons. James Murphy, in his late address before the Section of Obstetrics, at the Annual Meeting of the British Medical Association,[3] said: "Puerperal septicæmia is the most fatal disease that childbearing women are exposed to, and though its frequency has been discussed of late, its fatality has, I fear, been but a little, if at all, reduced."

But immediately fatal results ofttimes eventuate from the attempt to produce criminal abortion; the shock, unexpected injury, uncontrollable hemorrhage—all make a sad record in this horrible work. The coarse brutality that will allow one to engage in it, is necessarily accompanied by more or less unskilfulness, that shows in every detail a lack of scientific refinement and natural delicacy. In the *American Journal of Obstetrics*[4] Dr. Hektoen, of Chicago, reports a case of an abortion, produced by a "Dr. S.," at the fourth month of pregnancy; "the insertion of a rubber catheter, its disappearance, rupture of the uterus, eventeration of the large intestines, and immediate death." It also states that the operator, "Dr. S.," had even pulled on the supposed placental cord, and that the patient herself had taken hold and pulled with all her power, "in order to expedite matters!" Two lives were thus sacrificed.

Dr. Hektoen, in the same article, gives another instance of an abortion at the fourth month, also resulting in rupture of the uterus and death. In the *Pittsburgh*

[1] Diseases of Woman, p. 50. 1880.
[2] Another Hitherto Undescribed Disease of the Ovaries, May 10 and 17, 1890.
[3] British Medical Journal, August 26, 1893, p. 453.
[4] July, 1892, p. 69.

Medical Review[1] there is reported a smilar case of rupture of the uterus from an attempted abortion, followed by immediate death. The *Cincinnati Lancet and Clinic*[2] reports a case of rupture of uterus and death. The *Journal d'Accouchement*[3] reports the case of "a woman, six weeks pregnant; death followed almost immediately from the attempt to introduce an instrument into the generative organs." Oskar Sattler reports tetanus as following a similar attempt. Stephen Crowe, of Baltimore,[4] reports the case of "a woman three months advanced in pregnancy. A tent was introduced; in the attempt to remove it it was broken, and three quarters remained in the uterus. The patient was removed to the Maryland General Hospital; temperature, 103° F.; pulse, 140; abdomen enormously swollen."

Dr. E. J. Ill[5] says: "A knitting-needle was in one instance forced through Douglas's cul de sac and the mesentery into the liver, to the depth of an inch, which was found after her death." He also tells the case of a "crochet needle, which passed through the fundus into the peritoneal cavity." The *Australian Medical Journal*[6] states that "within a week four women, in the prime of life, met death by the forcible introduction of an instrument into and through the walls of the gravid uterus." Eight lives were sacrificed. J. Phillips[7] reports "a patient dying from injection of nitrate of mercury into the vagina to procure abortion." In the *Albany Medical Annals*[8] there is reported "an attempt to blow air into a uterus three months pregnant, the woman fell over unconscious, and expired a half-hour later."

The *Boston Medical and Surgical Journal*[9] reports the case of instant death from "an attempt at criminal abortion on a strong, healthy woman, in the seventh month of pregnancy, air being forcibly injected into the uterus, causing instantaneous death." The inter-uterine douche may have detached a portion of the placenta, so that the air entered the circulation through the opened uterine sinuses, forming an air embolism. The entrance of air into the blood-vessels has frequently in these attempts caused instant death.

In many ways the effort to produce abortion may be immediately fatal. The newspapers of every city teem with reports of such ghastly deaths. Many may be unknown and unrecorded, but women hasten on. Many of them are like the daughter of the pious old sexton, of New York; healthy, young, and full of life, she entered the operator's office; he promised immediate relief, she never came out alive. The double crime was perpetrated. Uncounted millions of unborn infants have thus perished. There is no darker page in history. The extent and fearfulness of this work is not known or recognized, and cannot be measured. Those who engage in the traffic certainly do not comprehend its full import, or understand the deep, dark iniquity of their deeds. No words can depict its horrors or its terrible risks. It always destroys the life of one human being, and possibly a second; or, at least, may make a wreck of the poor misguided woman.

Statistics state that in New York City there are annually twelve or thirteen hundred of still-births. Probably half of the still-births are from induced abortion. In fifty years this would amount to over thirty thousand; and counting other cities of the Union, there would be hundreds of thousands more. But even these numbers are as nothing compared to the millions of "silent" births that are constantly being produced in the earlier months of pregnancy. As a mother said a few days ago, "I have missed twice, but I am going to bring my courses on." Thousands of thoughtless women are doing the same thing; and there are unnumbered "professionals" at hand to help. The *British Medical Journal*[1] gives the name of an old man, "Hippolyte Terle, who confessed to having practised it for years," and this man acknowledged that he "could not tell the number of times he had committed the murder," probably almost countless. The same journal[2] gives the name of another prisoner for the same crime, one "Elizabeth Topham;" nor could she tell the number of times she had produced illegal abortion. Well did Professor T. G. Thomas, in his excellent work, say:[3] "Statistics showing the frequency of criminal abortion never have been, and never will be, written." There are thousands engaged in the work, reaping their rich harvests; and, at the same time, making a harvest of deaths. But the most deplorable fact is, that there are a multitude of mothers willing to assist, or, doing it continually. Who can tell the number of infant deaths? A holocaust —a great army of little children are destroyed. The loss of infant life is amazing.

But, if possible, there is yet a greater evil. The woman who entertains such thoughts, who has such intentions, the mother who thus seeks the destruction of her own child, thereby perjures and blackens her own soul, and demoralizes her whole moral being. It is a prostitution of all her higher nature. To think of a mother contemplating the murder of her own child! studying to destroy the being that rests nearest to her own life, and bound to her by every tie of kindred, love, and interest. What a soul-staining! Could anything be more debasing and blunting of all the finer feelings and affections? She who in secret broods over such thoughts, who has such intentions, is making of that child and of her children murderers. The child must take on the then condition of the parents, moral and physical. It is as much a part and parcel of the parent as is the lower order of animals, where procreation is by subdivision. I could imagine that he who is guilty of signal crimes and murderous intents is born of such a woman—a woman who for days was trying to compass his murder, and was seeking opportunities to do it secretly and successfully.

What reason do women give for so doing? Some say, "It is inconvenient to have a child!" It should be their greatest happiness. Others say, "They have too much to do, too many claims upon them, the demands of society, fashion,' etc. But this is their first duty, and should be nearest and dearest to them. Others say, "A child is too much trouble." Ah! an infinite source of delight should the care of her little one be to any true mother. Others again declare "they have not the means to support it," or that "they want, for a while longer, to take their pleasure," "at some more convenient season," say they. A burglar who takes a man's life wants the money, because work is inconvenient, he has so many demands upon him, and this may relieve him from care and trouble, and enable him, a while longer, to take his pleasure.

There is more similarity between the two than we dare trace out. Women are not taught to understand these things, they are not sufficiently instructed as to the wonders of their own being, or even of the simplest laws of life and health. They do not sufficiently know the great mysteries and beauties of life, that from the moment of conception a child begins to live, that as soon as there is a combination of the two elements, it is a human being. If not then, will anyone say when life begins, at what time the soul meets the body? I maintain that the destruction of this new being, even in the earlier periods of existence, is as much murder as it would be in the latter months of pregnancy, or in the earlier periods of infancy. I hold that it is as much murder to destroy a child that will be born next May as one that was born last May. Some have asserted there is no life till it moves, or what is understood as the "period of quickening." At the first moment there is

[1] 1867, p. 22.
[2] 1879, p. 361, W. J. Chenoworth, Decatur, Ill.
[3] Liége, 1888, vol ix., p. 265.
[4] Maryland Medical Journal, Baltimore, 1892, vol. xxvii., p. 1013.
[5] New York Journal of Gynecology and Obstetrics, p. 893, 1892.
[6] Australian Medical Gazette, Sydney, vol. v., p. 39, 1885–86.
[7] Transactions of the Obstetrical Society, London, vol. xxxii., p. 303, 1890
[8] S. B. Ward: p. 1, 1889.
[9] Pp. 185–192, 1879.

[1] October 17, 1891. [2] March, 1893, p. 612.
[3] Diseases of Women, p. 50, 1880.

motion, and there is motion every moment of its existence. The new being unceasingly moves, and the powers, processes, and changes, even at this early period, are marvellous. It is then a human being. To destroy it is worse than vandalism. To attack it thus, in the dark borders of its existence, in the vestibule of its being, when it is so helpless and defenceless, is a most cruel warfare, a most unfair battle, more cowardly than the midnight assassin, or he who puts the dagger in the heart of the unsuspecting. But it is not the "dark borders of existence." It is holy ground. Eternal Wisdom is there at work. "He formed us in the depths." "Our substance was not hid from Him." "He breathed into us the breath of life." From the first it is a living soul, endowed with vast capabilities and possibilities. It has work in life to do, and an eternal destiny. Have we a right to deprive it of its future possibilities, and opportunities of fulfilling its high mission? Shall their unborn spirits go to Him, and say they were not allowed to accomplish their allotted work? What if the mother of Washington, of Shakespeare, of Lincoln, or of Milton had so acted? In eternal light there will be just as sad reckoning, in every case. A sin so terrible brings its full and increasing evil, with arithmetical progression. The responsibility is not all in the simple act, it carries a weight beyond. Are those who help women to do this deed any less to blame? Is not their work the blackness of darkness, by whomsoever performed?

In 1879 Mrs. G——,[1] the mother of children and the wife of a prosperous business man, called at my office. She was then twenty-eight years old; married six years, had three children, and one miscarriage. She stated that she had found herself again pregnant, and wanted "to get clear of it;" also said that her miscarriage was brought on by her physician replacing the womb, adding: "My doctor knows that I am now pregnant, but he does not think I can carry it, and that it would be just as well to bring it away now. He has been trying, and gave me aloes, told me half a teaspoonful was the dose, but if I would take three it would make it all the surer."

Here a woman of some wealth, position, and a church member, deliberately comes and asks me to help her to destroy her unborn child, saying, "She is not going to have it, because she has too much to do." Murder was in her heart. While I had the most intense disgust and indignation, I quietly told the poor woman she ought to be thankful and feel honored that another member was to be added to her household, that nothing was more lovely or interesting than a large family of children. She coldly and cruelly replied: "I am not going to have this child, and my family physician has been giving me pills to enable me to get clear of it." She gave me his name, I warned her of the danger, urged her to desist, and asked her if she had any more right to destroy that child than any other member of her household. The woman went home; I feared my word would not sufficiently impress her, so the next day I wrote her, emphasizing the same thoughts. The child was allowed to live. He is now a big boy, attending school. I have seen him many a time, but how near he came to destruction! and probably he will never be as finely constituted as if his mother had not brooded over and contemplated so heartlessly her own boy's murder. When will mothers look into these things and understand.

In 1866 a mother called to see me, wanting then to get rid of her unborn babe, saying that "she had three children, and her husband was not able to support any more." I inquired if she was not willing to share her little with this one also. I presented many considerations. She heeded nothing, but, with cold selfishness, seemed determined on her child's murder. I gave her more serious words of warning. She went I knew not whither. This woman was more cruel than the Hindoo mother who throws her child into the Ganges.

[1] All the circumstances here narrated are facts. Names will not be mentioned, whether the parties live in Maine or Mexico. The facts belong to me, and are accurately stated.

One day, more than twenty years ago, I was called to see a sick patient. It was a home of comfort and plenty. The young woman, scarce eighteen years old, lay in her bed; she was a delicate, feeble girl. By her bedside stood the mother, a refined, elegant woman. The mother simply called my attention to her sick daughter, that she was not regular, and that she wanted "her courses brought on." My duty was to find the cause of this retention. Examination showed that the patient was two months pregnant, and my first inquiry was how long she had been married. This revealed all. The mother, in her deep grief, told the tale of sorrow, of the daughter's engagement, and the man had gone!

This read a whole lecture as to a mother's duties and her watchful care, and how she should instruct her daughters in all that is right, and show them the beautiful side of life. The mother exclaimed: "This must be got away." "But," said I, "the daughter must now do what is right. She cannot destroy the being to whom she has given life." "Ah," said the mother, "death before dishonor; my daughter is not going to be disgraced all her days, and the man go scot-free." I reminded the mother again that it was a living child, and that to destroy it would be murder; and besides, would imperil her own daughter's life.

I left them in their grief. The next day the father saw me, said "he knew of my removing successfully a tumor from the womb of a lady who was a friend of his wife, and that I could do this just as safely." "That," said I, "was done to save life; you ask me to destroy life, possibly two lives." He offered a price! "No," said I, "not for this city full of gold, nor for ten million cities besides, would I take the guilt of murder on my soul." Notwithstanding all my warnings they found someone to do the dark deed. It was done in some way or somehow. Years after I met this young woman. She was an invalid. She married, but no babe ever came to bless that wedlock. She had to think of the pearl, the priceless jewel, that she had thrown from her, and that she had destroyed her own child! If young girls were instructed, if they understood, they would be far from such work.

In 18— a young lady called at my office. She was the only daughter of a prosperous merchant, for whose household I had been the family physician for more than a dozen years. I listened to her sad story—engaged to be married—one false step! I advised her if she loved the man to marry him, but to go first to her mother for counsel and instruction. She did both, the child was saved, and the daughter's life was spared.

In 1878 a young girl of education and intelligence called. She was pregnant and her affianced gone! When will girls learn to do right, and when will their mothers instruct them in all things. The principles of moral rectitude, planted deep, would deter from such conduct. If conscience or delicacy does not restrain, they might remind themselves of the startling tragedy of the king's daughter: "The hatred wherewith Amnon, the betrayer, hated her was greater than the love wherewith he had loved her." I advised this young girl, she trusted me, the child lived, and she thus saved her own health and strength, and had not the sin of murder on her soul. She must think of the rest.

A few years after, a grief-stricken one called on me as a physician to tell her tale of woe. I was more than grieved that she and others so little understood me as to imagine that I could or would help in such nefarious work. I attempted to give her light and advice. Two days after, the marriage rites were solemnized.

Another in like circumstances. I gave her the same counsel and advice, both child and mother were saved; but what a history of remorse and self-condemnation.

For the young unmarried girls there might possibly be some forbearance, some sympathy for them, in their desperation and misery. They are led on, deceived by false promises; they trust, and are left in desolation and bewilderment; they fly anywhere, anywhither for help or refuge;

but married women, what excuse have they? For them there is the most utter condemnation and execration.

In 1885, during the month of December, a married woman, Mrs. C——, called at my office, elegantly and expensively dressed. She informed me that she was then in the third or fourth month of pregnancy, and expressed her determination to get clear of the child, saying that she had suffered so much, had been sick since her last confinement, nine years previously, at which time she was ill in bed many weeks with high fever; on the eleventh day was not able to turn her head, and since that time the distress in her pelvis had continued, especially on the left side. She said further, "I do not want this child, it is an unwelcome visitor, and I will get clear of it. I have taken ergot by the quart, and have pills from the physician; he says he can help me, but as I have to go in the cars it might endanger my life." I explained to this woman the danger of such attempts, that it was almost sure destruction to her own health, that nothing was more disastrous than expelling prematurely the fœtus, that the uterus was not then physiologically prepared for the work, and that the injuries resulting therefrom might prove fatal; and besides, her already deeply lacerated cervix would be an added element of danger. I also reminded her that the child was a living being, even showed her a papier-maché preparation representing the fourth month; that at that time the fœtus was a perfectly formed child. She looked at it, tears came into her eyes; she said, "Is it so formed?" But she soon controlled her feelings, adding, "I do not believe God has anything to do with it, I shall get clear of it." Can anyone realize the stony hardness of her heart? I reminded her that this child might one day be a blessing to her, probably was given to comfort her in some trying period of life. Again I asked her, "What right had she to interfere with its existence." Then I told her plainly and positively that I would not, for all she had, and twice the mines of Golconda, help in so foul a deed. I heard nothing more from this woman until the fifth of the next May, when I was called to attend to her confinement. After the confinement she was able to be up in nine days. A month after I repaired successfully the old laceration of the cervix.

I hold that a woman who can understandingly contemplate such work is in no way to be trusted. This patient left without paying me for the examination, or the two hours' talk by which the child's life was saved, and probably her own; nor has she since paid for my attending her in confinement, or for the surgical operation or the subsequent medical attention. Also the two physicians who assisted me in the operation have received no financial pay for their work; we have only the consciousness of right doing.

The child was a little girl, and many times have I seen this little fairy playing in the street; but will anyone tell me that her young soul was not tarnished by such desires on the part of the mother.

Many beautiful little children are now walking the streets that I have saved—have prevented their mothers from destroying them. These mothers came to me with the unholy purpose and most wicked request. To all alike I have endeavored to show them their error and point them to the right course.

A good woman, the mother of many children, a lady of considerable wealth, and who for years had been a patient of mine, and consequently would have been supposed to have known better; yet this woman joined with her daughter-in law to destroy the latter's unborn child. She coldly informed me that she was going to have it done! I expressed my condemnation in the most unmeasured terms, telling her that it was not only a monstrous crime, but would be a great wrong to the daughter. I said much, and presented many considerations, but strange, this mother was firm and decided; said her son had enough children, and that he had to get along in life. The parties went to a neighboring city to have the crime committed, by whom I do not know. I knew that the time was fixed. I made one more effort and wrote the following letter to the mother: "May 26, 1880. I cannot let this day pass without giving you another warning. I have reminded your daughter of the great danger, that if there is one death in a hundred she may be that one. I have urged her to desist, now I appeal to you. A child that is three months old has as much right to live as one who is nine months old."

This letter was carried by my faithful coachman, and delivered in person. The operator who was engaged to do the atrocious work, I suppose, dared not proceed; at least the child was saved, and possibly, thereby, the woman's life also.

In 1882 I was sent for to see a Mrs. M——. She was the mother of a large family of children, and was then in the fourth month of her ninth pregnancy. The uterus was in extreme retroversion, there was a deep transverse laceration of the cervix, and the perineum gone. I restored the uterus to position, and put in place a Thomas Cutter's pessary, which made traction from without and held the organ securely. The patient showed very much improved conditions, was comfortable, and in every respect progressing well, when her sister, who prays and talks in meeting, called to see her, and insisted that the child be got rid of, that the patient should not be allowed to suffer, saying that her sister had already more children than she could take care of. Thus this sanctified woman wanted to destroy the four months' old child, and was urging me, the physician in attendance, to do the deed. I reminded her that the patient was doing well, that she would suffer vastly more if such procedures were adopted, that in themselves they were full of peril. Yet this eminently pious lady still insisted. It was now my turn to give "a Bible Reading." I only reminded her of the sixth commandment, and then left, with the authoritative command that the patient should in no way be disturbed. Four and a half months after, I attended the woman in confinement. She was delivered of a fine, healthy boy, without any unpleasant symptoms. A few months later, I repaired for this woman the lacerated cervix and perineum. She did well in every respect.

Mrs. B——. The patient was a happy wife and mother. I had attended her in several confinements; her luxurious table was surrounded by many "olive vines." She removed to a neighboring town; she sent for me. I found the patient very much emaciated, and the abdomen enormously enlarged. After a most careful examination I pronounced her in the fifth month of pregnancy, with probable dropsy of the amniotic coat. She was grieved to hear of the pregnancy, and said: "I must get clear of this; I must." I showed her a more excellent way. She heeded my counsel, and, four months after, I attended her in confinement. Amid the multiplicity of water there was the little, silken-haired baby. Subsequently this woman was again pregnant, and this time was threatened with a miscarriage; she sent for me; I took measures to prevent it. She said: "Let it pass, let it pass, I have too many children." The child was saved. He is now the pride of the family.

Many a woman who asks that abortion may be produced would be very far from it if they understood what it signified, or had an idea of the enormity of the crime. A kindly hearted woman came to see me one day, she was in distress, she had been unfortunate. "The time," said I, "for you to have thought of these things was before the first wrong step, the only way now for you is the path of rectitude." I asked her if she would deliberately destroy a human being. "Why," said she, "it is not a living being until it moves." "It moves a long time before you perceive the motion, and it is a living being from the first." She seemed almost frightened at the contemplated act, and left saying on no account would she allow anyone to commit the deed.

In 1888 or 1889 a patient came to consult me for continued ill health that had existed since early menstrual life. She had been married a number of years and had no children. I found the cervix anteflexed, uterus re-

troverted, and the ovaries enlarged, prolapsed, and congested. After some weeks' treatment her improvement in all these respects was marked. The pain in the pelvis very much diminished, the ovaries were reduced in size, and were less sensitive and sore. A few days before she was to return to her home in another city, to make drainage more complete for the uterus and the adnexæ, I again dilated the cervix, remarking to the patient that "there might possibly be a chance of her becoming pregnant." At the expiration of some months the patient returned for further treatment. I found she was pregnant, I informed her of the same, supposing it would be a cause of great joy and congratulation. On the contrary, she was grieved and depressed; and, to use her language, asked if "she could not be relieved." Even her husband called and ventured to introduce the subject. I told him of the perils of such procedures, that I considered his wife extremely and unexpectedly fortunate, and believed it was her last chance; that certainly she ought to consider it her's and her husband's greatest happiness.

The wife continued to take sad views of the situation, and after their return home she wrote: "Oh, my dear doctor, if it only had not happened. I cannot be comforted with your idea that it is a blessing. Will you please tell me of something that will take away this sickness of the stomach, for I feel that I would rather die than live like this."

Again she wrote: "When I came home the first time I had not felt so well and happy in all the years of my married life. Everyone remarked how well I looked—but oh, this trouble—oh, dear doctor, please help me out of it—I cannot have it so, and if you will not I will do something. I cannot let it go on. I was so nervous at night that I felt I could kill myself. Please give me something or do something, for it nearly makes me wild. I want to be free, that I may get well and take my comfort." Poor misguided woman!

I wrote the husband at length, repeating what I had said in a previous conversation. A later letter from the wife says: "I have given up all hope of this passing away, for it must be three months. Oh dear! I have so longed for it, I know that I shall never live through it, and sometimes when I think of it, I feel like killing myself—am no more reconciled. I was in hopes to write you I was all right once more, but no such pleasure is mine. Good-by, good by, with love and thanks for making me as strong and well as I am, even if you did get me in more trouble than I was before."

I warned the woman again and again, yet she found someone, in her far-off home, who would undertake it. "September 30, 1890. My dear Doctor: I have been very sick. I was taken unwell, and it terminated in a hemorrhage. The physician used cotton, sponges, etc. If I attempt to walk across the room, the pains come. What I so longed for and prayed for has happened, and now I do regret it, for it was a little boy, and I suffered as much as if I had gone through it all, and nothing to show for it. It is five weeks, to a day, since I was taken sick, and here I am, not out of my room, and have my nurse with me yet, and am now beginning to think I shall always have to keep her. I am again flowing, and the last two days it has been very bad. The doctor left me some medicine. I am so discouraged that I cry most of the time. I am so sore that I can hardly move, and have such a heavy feeling. Write me as soon as you can spare a few minutes, and tell me how I can get well, instead of being so sick and miserable."

This poor young woman never will be as well as she otherwise would have been. If she had let the pregnancy continue, she would have had a normal parturition, and been better physically and mentally than she had been in years; and I believe her hysterical nervousness, from the congestion of the ovaries, would have gradually disappeared. She is now a sick woman, and it will no doubt take a long time to repair the injury she has done herself; and how can she ever rest under the thought of having destroyed her own child, probably the last that will ever come and ask for her loving embrace. This poor woman could not comprehend the enormity and danger of her work.

Some know well all they do, the full significance of their crime, and their doubly stained souls are filled with deception. April 20, 1890, a woman called to see me, with a man whom she said was her husband, requesting to consult me in my private office. She gave her name, and said, "she had been married twelve years, had one child ten years old, and was now two months pregnant, and wanted to be relieved." I examined her case, I told her she was not pregnant, and did not believe she could have a child in her present condition. She repeatedly said, "Pass the sound, pass the sound." Under her supposed condition this seemed so brutal I thought that a woman who could so speak was "fit for treason, stratagems and crimes," *and conspiracies!* I dismissed her from the office, and in a few minutes went into the parlor to speak to the "supposed husband." Both had disappeared! I sent a letter to the fictitious name, and to the probably fictitious address, emphasizing all I had said, and adding that the apparently innocent expression, "Pass the sound," might be fraught with tremendous evil; and, to my mind, in her supposed condition, was cruel and wicked.

One Saturday morning, in September, 1890, my door-bell rang; I was called to the office; there stood a young married woman. She related her clumsy story. Without ceremony I should have dismissed her, but wanted to give her a word of warning, and show her the exceeding sinfulness of her proposed course. I called a friend from the parlor, a lady of rare intelligence, who kindly added to and emphasized all that I had said. This young, ignorant, coarse woman, recovering herself, said, "It is a commercial transaction, you give me the medicine, I give you the money." She imagined it a fine argument. There she stood with her paltry dollar, her husband probably making $7 or $9 per week. Ten million times the wealth of Europe and Asia would have been a trifle far too small. Turning again to the woman I said, "Absolutely, if a grain of medicine would enable you to carry out your vile purpose, I would not, for unnumbered millions, give it to you."

One Sabbath-day, in September, a girl, some twenty years of age or over, called to see me. A few touches painted the tragic story. She said she wanted her courses brought on. "Do you know what that means?" said I. "It is one way of destroying your child, now two months old. You are sorry for what you have done, and want to hide it; you cannot. The only right way is to have the child, whether you marry the man or not." She left, promising that she would go to no one for the wicked purpose.

A school-girl came in the summer of 1887. She was pregnant, and in distress. She said that she was able to pay for it, and would go where she could have it done. I said, "To you it will be especially dangerous, you have been diseased since early menstrual life." She said, "There were doctors that would do it for money." "Don't let anyone do it. Your only right way is to go through with it. You do not know what may be the consequences of another course." I wrote the same and more in a letter to her mother, requesting the daughter to deliver it. I knew nothing more.

One day a beautiful young girl, aged sixteen, reared in the lap of luxury and wealth, came in a coupé with her affianced and false lover. She had in her hands a large roll of bills, which she held prodigally and wanted to give lavishly. I felt her very presence was contamination. Said I, "You are an only daughter, your mother knows nothing of this, your father does not know where you are." They had given her every luxury, but had not given her the most valuable of all—parental control, instruction, and discipline.

I hold that children should be educated in the right way and taught to do right. If they have coarse natures which prevent them from going in the right path, they

should be made to do right. Eli's only sin was that he did not *make* his sons do right. In unmistakable terms I gave the girl words of warning. Her beautiful face listened kindly to all I said. She went I know not whither.

How many are taken from the home of innocence and purity, scarce conscious of what they are doing; they do not realize the heinousness and great wickedness of this one false easy step. After! Oh, heavens! The pall of darkness comes upon them, they go deeper and deeper.

One young man sent the following letter to Dr. Charles N. D. Jones, when he was House Surgeon in the Brooklyn City Hospital:

"I am in a little trouble, and I want you to help me out, if you can. A young lady friend of mine I am afraid is in the family way. Now, I will not keep it from you, I think I am to blame. It has only been a week, so you can fix her easily, I think. I wrote her to come to you, but if she does not, will you please call and see her? She lives (he here gives the number and street). You send the bill to me, and I will fix it. She has not had her usual monthly sickness, and I am frightened. As soon as you get this, please call and see her. Her name is (he here gives the name in full). Now, please try and get me out of this trouble, and I will be everlastingly indebted to you. It is not convenient for me to come up to the city, else I would go up and bring her to you. Hoping that you will be able to fix her all right, and trusting that you will, of course, keep quiet. Get me out of this trouble. I remain, etc."

The reply:

"City Hospital, Brooklyn, July 31, 1884.

"Mr. ——: Yours of the 29th received. Your friend was here to see me the day before I received your letter. I must answer you as I did her. I would not think of doing the least thing to bring on her courses, and no man in his right mind would presume to ask me to do such a thing. I must positively decline to aid in any such work. Yours, etc.,

"C. N. D. Jones."

This trusting young girl was sent to the office of a young doctor in a public institution, saying: "Send me the bill, and I will fix it." But how will he, the lover, ever fix it with the young girl. That girl's mother trusted him!

The way back condition, as I have before intimated, is that mothers should instruct their daughters, teach them first parental obedience, and then all that relates to their high moral duties and obligations, unfold to them the great principles of life, of their physical being, their organization, and then tell and explain to them the beautiful laws of health. This is necessary for every day welfare. Why should not young ladies study these subjects as well as rocks and stones, stars and flowers? Does she hesitate to examine a flower, acknowledge it a thing of beauty and joy forever? Just as pure is it to examine this greatest of nature's work. Girls are ignorant and uneducated, and thousands are led into evil and every-day violations of the most ordinary laws of health as well as of morality, for want of knowledge, or because they have not been properly trained and instructed.

In 1887, a young girl, scarce eighteen years of age, called to see me; she wanted to know if she was pregnant. I found her in the second month. She told me the sad story, and said with burning tears, "It must be taken away." I could not say to her, "Marry the man!" The one who had so treated this young girl had sacred and legal obligations to another. I could only say to this child, "Go and tell your mother, she is your best friend; but destroy the child, you must not." If one for his wife's honor may shoot down the betrayer, how infinitely much more does he deserve such a fate, who leads astray and blasts irretrievably the young girl.

A sad, broken-hearted woman, lifting her beautiful face to heaven, vowed that she would destroy the wretch, the author of her misery, nor would she nourish or give life to the product of his being. He made her promises of marriage, but left her overwhelmed with anguish. Why will women trust and sacrifice so much?

Another young woman, of more than ordinary intelligence, was in despair and broken hearted. Her child was born in a public institution. As the mother looked upon it as from him who had blighted her hopes, she vowed that she would destroy it. It was necessary to watch her night and day; for, continually and constantly she threatened the child's destruction.

One, in her shame and desperation, drowned her own little helpless one. Ever she saw the little outstretched hands of her own babe pleading for help. The picture never could be effaced. She became wild, her reason dethroned, but where was her betrayer? She was wrecked, but no one suspected him of wrong doing.

"One more unfortunate." The young and beautiful daughter of a goodly man trusted a young student. He went to honor and emolument, she to insanity and death.

Thousands perish thus in misery and desolation. Women are always the greatest sufferers. Nathaniel Hawthorne relates a touching story of human frailty. The young and beautiful Hester Prynne stood on the pillory of public shame; a select number of wise and virtuous persons, all with grim rigidity and cold severity, were on a high platform, to deal with this poor girl, touching the vileness and blackness of her sin. There she stood, under the weight of a thousand unrelenting eyes on this, to her, a scaffold of execution. One of the said righteous judges to condemn the young woman, was the father of her child!

A similar touching incident is related in an ancient volume; and, probably, from it, Hawthorne gets the gem thought of his classical story. Judah, a great man, high in office and high position, heard that his daughter-in-law had played the harlot. His righteous soul was filled with holy horror. "Bring her forth, and let her be burned." The young woman stood before the assembled multitude. "Discern, I pray thee, whose are these, the signet, and bracelets, and staff." Judah acknowledged they were his. Months before he had met this young woman behind the rocks, and this pledge he had given to her!

A story is told of another judge. Again, a lonely and desolate woman stands before an incensed multitude. "Master," said they, "she was taken in the very act." The judge, with words of infinite wisdom, said unto them, "He that is without sin among you, let him first cast a stone at her." "And they that heard it went out one by one, and the judge was left alone, and the woman standing in the midst." Not one of all that vast multitude could cast a stone!

There is another chapter of this medico-moral legal subject that cannot be omitted. Very lately a gentleman, of high respectability and intelligence, called, informing me that his wife was pregnant; but that neither he nor she thought it right to have this child, adding, "that any doctor who wanted a good practice should take care of his families; that this was the physician's duty, and it was done by the best." I replied, "It can be the duty of no one; and no promise of practice would be of the least consideration." The gentleman unwittingly mentioned the name of the physician whom his wife was then consulting, and stated that this physician "had already put something in the womb that had made her flow," at the same time assuring him, her husband, that "all would be right." This gentleman also remarked that "he had sent this physician fifty such cases," then quoted the words of a medical man who had said: "Abortion was not legal, but it was right."

A few months after, it happened that I again saw this young man, and remarked to him, "So your wife lost her child. Do you know how the doctor did it?" Before thinking, he quickly replied, "Yes, I do, I know exactly how he did it." Alas, alas! it was done, and by a physician, and he a member of a County Medical Society!

An article, in the *New York Gynecological Journal*

says:[1] "The specialist in abortion exists. He is no ideal, but an actuality, a real living man, as a professor, ably filling a chair in college, he is perhaps well known. As a specialist in abortion, he is recognized only by a favored few."

An editorial, in the same number of the journal quoted above, says: "Practices, not infrequently carried out nefariously, by reputable physicians. Some hypocritically practise it in secret, while repudiating it in public." This editorial further makes the startling announcement: "It can be no secret to those of us who have been even a few years in active practice, that fœticide, in the early months of gestation, is constantly performed with the flimsiest excuses, by prominent reputable men and women too, in every community," adding: "This has long been a plague spot in the profession."

I cannot agree with the words of the editor, or of his correspondent. I absolutely deny the assertions, though, four times lately, I have heard physicians say, "All do it;" and a member, at the annual meeting of the Tennessee State Medical Society, asserted,[2] "I fear that the profession frequently takes a hand in the nefarious business." This also is untrue. It is not the profession. It is a few unworthy ones in it. In no profession are there men of more exalted morality, nobler aims, and purer integrity than in the medical profession. They do what is right. With large-hearted benevolence, they aim at doing the best for all.

In 1883, I stood in the parlor of a prominent member of the County Medical Society above referred to; the member pointed from his window diagonally opposite to the residence of another prominent member of the same society and said, "That man will do it any time for $50." I did not believe it then, nor do I now. (But how these brethren love!) It is sadder to know that one member of this same County Medical Society, and one who held a position in the Health Department, was sentenced for this offence; and, as I am informed, others in the same society have been under suspicion.

The writer of the article in the *New York Gynecological Journal*, further says: "We opine that the world would be better if abortion were done oftener."

What doctrine is this to teach in a medical journal! Certainly, the profession does not stand by such teaching. Good men, everywhere, raise their voice against the evil.[3] As far back as 1857, at the annual meeting of the American Medical Association, a committee[4] was appointed to investigate the subject, with a view, if possible, to the suppression of the growing evil; which committee, at the annual meeting, 1859,[5] made a report saying: "As a profession, we are unanimous in our condemnation of the crime; and, as a committee, would advise this body, representing, as it does, the physicians of the land, publicly to express its abhorrence of the unnatural and now rapidly increasing crime of abortion—the wanton and murderous destruction of the child." The Association then unanimously passed the following resolution: Resolved, "In view of the prevalence and increasing frequency of the crime, publicly to enter an earnest and solemn protest against such unwarrantable destruction of life."

But farther back than this, Hippocrates, the father of medicine, in the Hippocratic oath, pledged each of his pupils—and to which every physician must swear—never to be guilty of unnecessarily inducing miscarriage.

In May, 1871, soon after the startling disclosures in connection with the professional abortionists, Wolff and Lookup, the New York Academy of Medicine passed a resolution in reference to the "wide-spread crime." Again, September 21st of the same year, the Academy adopted a set of resolutions, pledging, "All its influence, its efforts in support of any legislative or other measures, which our law officers may propose, as offering a reasonable provision of mitigating, if not removing, the perpetration of criminal abortion, which is upon our country." The Medical Society of Berks County, Pa., passed similar resolutions. The New York Medico-Legal Society appointed a committee[1] whose report was made and unanimously adopted, at the Society meeting held on December 14, 1871, at the College of Physicians and Surgeons, of which the following is an extract: "As the proper name for the intentional destruction of the fœtus is murder, it is hoped that the time will arrive for its punishment as such."

At the meeting of the Crawford Medical Society,[2] on July 5th, the following resolution was passed: "Whereas, the practice of criminal abortion is steadily increasing, and in numerous cases which prove fatal—be it resolved that we petition the Legislature of this State, at the coming session, to enact a law by which the dying declarations of a person, who may die from the effects of a criminal abortion, shall be received as evidence in trial of anyone indicted for such offence." Copies were sent to various medical societies for consideration.

The *Journal of the American Medical Association*, Chicago,[3] calls it the highest crime—from some standpoints, at least—of which humanity is capable, and whose prevalence exceeds the highest estimates." He says, in another number:[4] "The obligation rests upon the medical profession to propose a method for checking the fearful progress of this evil."

The *Boston Medical and Surgical Journal*:[5] "A crime in itself one of the foulest, and against which, in times past, the severest penalties have been attached, and which three hundred years ago subjected those convicted of its committal to all the penalties inflicted on murderers." It adds: "With regard to the proposed remedies for this evil, we confess we have little confidence in mere legislative enactments. It is rather to the medical profession, and those more immediately connected with the morals of the community, that we are chiefly to look for the true remedy. The physician may do much by warning his patients against the dangers and guilt of this awful crime, involving, as it does, the guilt of murder and a cold indifference to the most sacred privileges with which woman is endowed."

An editorial in the *Medical News*[6] says: "The *News* has contended that it is the duty of medical men to instruct the lay world, through the lay journal, concerning hygiene and medical truth."

The report of the committee of the American Medical Association[7] further said: "If to want of knowledge, on a medical point, the slaughter of countless children, now steadily perpetrated in our midst, is to be attributed, it is our duty, as physicians and as good and true men, both publicly and privately, and by every means in our power, to enlighten this ignorance."

The *Australian Medical Journal* said: "We need a medical bill for the colony. Within a week four women in the prime of life have been sacrificed."

The late Professor Hodge, of Philadelphia, in his introductory lecture, quotes the ruling of Judge King, of Philadelphia: "Every act of procuring abortion is murder, whether the person perpetrating such act intended to kill the woman or merely feloniously to destroy the

[1] Special Operation for Abortion, C. H. Harris, Ga., p. 842, September, 1892.

[2] Transactions, fifty-fourth annual meeting, State of Tennessee Medical Society, p. 176.

[3] I am glad to record also that this young and vigorous journal condemns it; it says: "We heartily reprobate the article by Dr. Harris, not merely because we are opposed on principle to the practice which he advocates, but equally because his advocacy of them is illogical, and founded upon arguments of expediency which appeal to self-interest of the lower and more dangerous kind" (p. 846).

[4] This committee consisted of Dr. H. K. Storer, of Massachusetts; L. W. Blatchford, of New York; H. I. Hodge, of Pennsylvania; Barton, of South Carolina; G. A. Pope, of Missouri; A. Lopez, of Alabama; W. A. Brisbane, of Wisconsin; A. J. Semmes, of District of Columbia.

[5] Transactions American Medical Association, vol. xii., 1859, p. 75.

[1] This committee consisted of James J. O'Dea, M.D., Elbridge T. Gerry, M.D., George F. Shrady, M.D., William Shrady, M.D., Stephen Rogers, M.D., and Gunning S. Bedford.

[2] British Medical Journal, September 24, 1892, p. 675.

[3] 1885, p. 42

[4] Fœticide and its Prevention, H. C. Markham, xi., p. 805, 1888.

[5] February 16, 1860, p. 65.

[6] September 2, 1893, p. 271

[7] Transactions of the American Medical Association.

fruit of the womb." Dr. Hoag[1] says: "All believe the practice to be sinful as well as criminal." H. R. Storer says, in his essay: "The offence is one of the deepest guilt, a crime second to none." J. B. W. Newlin[2] says: "To correct the evil, recommends that the profession should teach the public the facts of embryology, in so far as they relate to the enormity of this crime; that they should thoroughly instruct our lawmakers, so that laws may be formulated which will let no guilty one escape."

The writer in the *New York Gynecological Journal* above quoted, further remarks: "Poor women are to suffer and to sacrifice everything at the shrine of maternity, as if it were for this alone they were made." I reply, maternity is woman's highest mission, and should be her greatest pride. While a woman may possibly accomplish, in other directions, all that is high, noble, and good, yet everything should bow to maternity. This is the shrine to which she brings her noblest offerings. Is she educated, has she physical health, and physical perfection? Are her mind, heart, and soul cultured and highly endowed? It is that she may give birth to more perfect and more beautiful children. This is the end, and should be her highest aim. This also should be the object of a mother's earliest solicitude and training for her daughter. To the shrine of maternity all should be dedicated. As I said in an article:[3] "She is a magnificent woman who can give birth to a large family of children and still retain her health."

The writer in the *New York Gynecological Journal* continues: "What sense is there in allowing a woman with diabetes, albuminuria, and the grave forms of disease, to run the gauntlet of pregnancy and labor? At once empty the uterus." This, when life is endangered, may be judicious; but, in general, if one's individual judgment may decide whether it is best for a child in utero to live, may not the same individual judgment decide whether it is expedient for a boy or girl of five or ten years of age to live. If, in one's judgment, a human being in utero may be destroyed, with equal right may we not destroy a human being at any age of existence? May we not, at any time, decide whether anyone's life is useful or to the advantage of him or herself and to the community? Is not this a most dangerous doctrine? Could a more cruel despotism exist? A physician has no more right to destroy a human fœtus, because he imagines it, in future years, may be sickly, than he has a right to destroy the delicate baby, because it possibly may have before it years of invalidism.

The writer of the same article next gives explicit directions as to how abortion shall be produced. He says: ". . . ," etc. He continues: "Snare No. 1 is passed into the uterus; sweep the staff around the globe of the ovum. Pull gently with forceps, until the mass is either extracted entire or cut in twain. In the latter event, repeat the procedure until it" (the baby!) "is chopped into fragments of easy extraction!" Hail horrors! lay on, Macduff. One almost shivers in reading these descriptions, and for this horrible work the writer holds out the inducement of "handsome returns and fat fees for special services."

I maintain that all this work is murderous, unprofessional, and degrading to the high office of a physician. A physician stands as a preserver of life, and should be the embodiment of honor and high morality.

November, 1893.

The Consumption of Absinthe.—According to some statistics recently issued by the French Government, the consumption of absinthe in France has risen from 57,000 hectolitres (1,254,570 gallons) in 1885, to 126,000 hectolitres (2,773,260 gallons) in 1892. The increase in the consumption of other alcoholic beverages during this period has been nearly in the same proportion.

[1] Medico-Legal Journal, New York, 1890–1891, viii., p. 118.
[2] Fifty-fourth annual meeting of the Tennessee State Medical Society.
[3] MEDICAL RECORD, September 9, 1892, Sterility in Woman.

Progress of Medical Science.

Acute Vertebral Osteomyelitis.—Dr. Morian relates two cases of this rare disease. An important complication consists in the spread of the inflammation and suppuration into the spinal canal. From the front the pus could not so easily penetrate into the canal owing to the ligament, but behind there is a space between the dura and the arches filled with a loose and vascular tissue to which the suppuration has ready access. The membranes and the cord itself may also become involved. In one case pus escaped from the situation named above when the spinous process and arch were removed, and in the second case the abscess extended from the third cervical to the twelfth dorsal, and from here again down to the third lumbar vertebra. The pleura or peritoneum may also become involved. The suppuration is more likely to remain localized behind the peritoneum than behind the pleura. Osteomyelitis of the spongy bones is likely, according to the author's experience, to run a more unfavorable course than when the long bones are affected. As to the symptoms, the onset was rapid, with fever and pain in the part of the vertebral column involved. The column was held rigid. At first the second case resembled epidemic cerebro spinal meningitis; the head was drawn back, the neck and back muscles rigid, and the pupils unequal. Later, however, the pain became more localized, and a swelling appeared. In the acutest cases death may occur before the site of the disease can be localized. Prevertebral suppuration may cause diagnostic difficulties. Acute rheumatism very rarely affects the vertebral column, and then other of its manifestations are present. Acute pneumonia or lumbago might be confounded with it. The prognosis depends on the severity of the toxic symptoms. It is more serious if the dorsal vertebræ are involved, owing to danger of spread to the pleura. The abscess should be opened as soon as possible, and the focus of disease, if it can be got at, scraped away, or better still, as in the case of the arches, removed. The first case occurred in a boy, aged ten. He had pain in the loins, headache, and fever. He kept his back rigid. Some ten days or so later a swelling was found along each side of the lumbar spinous processes. This was incised, and the spinous process of the fourth lumbar vertebra and a part of the arch on either side were removed, pus escaping from outside the dura. A swelling over the foot had also to be incised, and subsequently another one over the humerus. The boy eventually made a good recovery. In the second case of a lad, aged seventeen, a swelling appeared in the region of the eleventh and twelfth vertebræ about seventeen days after the onset. This was incised, and the vertebra found bare. There was some improvement, but the pleuræ became involved, and the patient died. The body of the vertebra showed foci of pus. A communication was traced between the pleural cavities and the disease. The outer surface of the dura was altered. Small abscesses were present in the kidneys. The staphylococcus was cultivated from each case.—*The British Medical Journal.*

Four Children at one Birth, two boys and two girls, all healthy and well developed, is the record of a proud and happy mother in Tennessee.

Mrs. Kadumbini Ganguli was the first native female graduate of the Calcutta University. She passed the L. M. S. examination of the Calcutta Medical College with credit seven years ago, and last year became a licentiate in Medicine and Surgery in England.

Normandy Cattle.—The *American Veterinary Review* recommends the introduction of Normandy cattle (Cotentine the breed is called in Europe) to take the place of the Jerseys which are so prone to tuberculosis. The editor says that in addition to the fact that the breed is claimed to be the finest milking race in the world, it is free from pleuro-pneumonia and tuberculosis.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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CAUSES OF DISEASES PECULIAR TO WOMEN.

THE causes of diseases peculiar to the female sex are surprisingly few in number and limited in character. Ignorance and neglect seem to be the most powerful factors in the production of such disorders. A paper in the *International Medical Magazine*, August, 1893, by Dr. Charles P. Noble, states that these causes are about five in round numbers. The first in importance is imperfect development of the sexual organs. Gonorrhœa comes next. The third is septic inflammation following childbirth. The fourth is lacerations due to childbirth. And the fifth may be said to be mechanical and chemical, viz., constipation, erroneous habits of living, and errors in dress.

Imperfect development of the sexual organs as a cause of disease in women is often overlooked. As a rule, when the development of the sexual organs is interfered with, the development of the whole body is also arrested. Almost without exception, such women belong to the class of neurotics. They are especially liable to neuroses, especially chorea, headache, and neuralgia. Puberty is often delayed, and menstruation is always painful. The pain belongs to the type of the so-called ovarian dysmenorrhœa: it begins a day or several days, perhaps a week, before the menstrual flow, and is especially felt in the ovarian region. Uterine dysmenorrhœa, due to lack of development in the uterus (especially of the cervix), is frequently present. The pain is paroxysmal, and less marked when the flow has become fully established. Too much school work and too frequent examinations impair the tone of the nervous system, stimulate emotion, interfere with digestion and sleep. Anæmia and depraved nutrition follow, and these in turn aggravate the neurotic state. When such girls arrive at puberty there is not enough vital force left over for the proper development of the sexual organs. The most remarkable cases of this arrest of development are to be found among the very poor, among girls who have not been forced at school, and who in some instances have never been to school at all. The cause of arrest of sexual development among them is hard work undertaken too early and steadily, as in mills and factories. Absence of fresh air, outdoor exercise, and this excess of work, do for the very poor just what lack of fresh air, outdoor exercise, and too much study and excitement, do for the rich. Menstruation among these girls is tardily established, never perfectly performed, and may cease or become irregular between the twentieth and thirtieth year. One common cause of this arrest of development in the female sexual organs the author has overlooked, and that is infectious disease during childhood. Scarlet fever, measles, mumps, diphtheria, etc., set up inflammatory processes here that result often in permanent damage to the tissues. There is not only arrest of development in these organs, but there is also destruction of their substance proper, due to the various poisons of infectious disease. Neurotic girls need lighter tasks and more fresh air and sunshine than their stronger sisters, more rest, and more sleep. Any functional disease should be attended to at once and cured. This will help store up vital force for the exigencies of puberty. When menstruation fails to appear at the accustomed time, special care is necessary, the case being watched carefully till menstruation is fully established. Such a plan as this must of necessity diminish dysmenorrhœa and sterility, and laceration of the cervix and the perineum, and also decrease the cases of chronic ovaritis and ovarian cystomata.

Gonorrhœa, one of the most prolific sources of disease in women, is to-day very generally recognized, though a knowledge of its full significance is of recent date. Noeggerath, in 1873, published his paper on "Latent Gonorrhœa in Women," and called attention to its serious ravages. His views met with fierce opposition at the time, but their truth has been established by the work of modern abdominal surgeons. It is now well known that gonorrhœa is one of the chief causes of uterine, tubal, ovarian, and peritoneal inflammation. The exact percentage is not yet determined. Cities containing great numbers of the poor and the vicious, and of the rich and immoral, give a higher percentage than rural communities having a more decent population.

Septic vaginitis, endometritis, and metritis, are well known forms of puerperal inflammation. They frequently persist and require treatment after the puerperal period. Aside from the more rapidly fatal cases, the most serious result of infection during labor is the spread of the septic inflammation to the uterine appendages, giving rise to salpingitis, ovaritis, and peritonitis. Sometimes there is perfect recovery. More often the result is chronic inflammation, with formation of adhesions to the neighboring structures, or the collection of fluid, serum, blood, or pus, in the tubes or in the ovaries. How far this is due to puerperal septic inflammation, and how far to latent gonorrhœa, is a mooted point. A much less frequent result of puerperal infection is acute inflammation or abscess of the broad ligaments. Phlebitis and its associated condition, *phlegmasia alba dolens*, are other abnormal manifestations due to puerperal septic infection. Gonorrhœa and puerperal sepsis together cause fully ninety five per cent. of all cases of tubo ovarian inflammation.

Lacerations due to childbirth are also followed by conditions disastrous to health. Those of the pelvic floor are even more important than lacerations of the cervix uteri, since cystocele, rectocele, and prolapsus uteri are directly due to them. Constipation is a bad habit common to women, and one that predisposes to the development of hemorrhoids, and to uterine and ovarian congestion, to retroversion of the uterus and prolapse of the ovaries. The full rectum can displace the cervix forward,

and the straining at stool, especially if the bladder be full, can topple the uterus over backward. Relaxation and loss of tone of the pelvic tissues due to congestion, also predispose to retroversion of the uterus and to prolapse of the ovaries. Constipation aggravates the symptoms of every pelvic disease, partly by pelvic congestion and partly by general deterioration of health, due to fecal absorption and contamination of the blood, and by loss of appetite and disordered digestion. Indolence, luxury, or the strained and monotonous life of the poor, induce pelvic disease. Tight corsets, tight bands about the waist, heavy clothes, heavy skirts, tend to displace the abdominal viscera downward. As rational dress is perfectly possible at present, without sacrifice of taste or beauty, these evils are no longer necessities.

The remedy for diseases peculiar to women, since they are so largely preventable, is to be found in applied knowledge. Growing girls, especially about the time of puberty, require care that will secure for them a normal development of the sexual organs. Gonorrhœa should be more vigorously treated than it is, the patient kept under observation until all abnormal discharges are arrested, and proper instruction given concerning abstinence in the matter of sexual intercourse. Laceration of the cervix and perineum are to be repaired early. Every effort should be made to prevent the spread of infectious disease. The evil effects of constipation, improper dress, and erroneous habits of living, require constant and careful explanation. This is pre-eminently the duty of the family physician, who is brought in contact with abnormal conditions in women before they come under the specialist's direct and exclusive observation.

THE PART OF THE BILE AND THE BRÜNNERIAN GLANDS IN DIGESTION.

A VIEW which many persons take of their indigestion is that they have "bile on their stomachs;" and they corroborate this by speaking of the bitter taste in the mouth and of various other evidences of a so called "biliousness." Now physiologists have generally been disinclined to believe that bile often gets in the stomach, since it is poured out into the intestine some distance below the pylorus and since peristalsis always occurs normally in a direction away from the stomach.

Professor Herzen, however, in his observations on a man with a gastric fistula, asserts that bile is a very constant ingredient of the gastric juice or, rather, of the chyme (*La digestion stomachale*, p. 78). In 107 out of 142 tests, bile was found in greater or less quantities. This view is supported by the experiments of M. Ch. Contejean, who in a large number of tests upon himself —a healthy man—found bile in the chyme. It is known that bile in any amount, however, retards and may even stop altogether gastric digestion. It is stated that from 30 to 50 drops will stop digestive processes in 3 c.c. of gastric juice. The theory has been put forth by Schiploff that one function of the glands of Brünner is to antagonize this dyspeptic action of the bile.

Dr. J. Belkowski, in the *Revue Médicale de la Suisse Romande*, has made an elaborate series of experiments in order to determine just what function the bile does play in gastric digestion and what the glands of Brünner have to do in the same process.

Dr. Belkowski agrees with the other observers that bile is frequently present in the chyme. He finds that beef's bile is particularly injurious to digestion, much more so than that of carnivorous animals.

He finds further that the secretion of the Brünnerian glands does not have any digestive power when the acidity of the medium is over one per cent. and that the part which it plays in gastric digestion is practically of no importance. The pyloric secretion has an almost equally slight value. Finally he finds that neither of these secretions has any part in neutralizing the bile, and that gastric digestion can and does go on very well despite the presence of bile. Hence a "little bile on the stomach" is more or less normal and does no harm.

The duodenal glands in man are few and probably rudimentary organs, though well developed in the sheep. Even the pyloric end of the stomach may come to be regarded as only vestigial—like the appendix.

THE REFORMATORY INVESTIGATION.

IT is gratifying to observe that the State Reformatory at Elmira is at last being subjected to a really judicial investigation. The verdict rendered against this most famous of penal institutions a few months ago, after an alleged investigation prompted by a vicious newspaper attack, was a surprise and shock to every one familiar with the methods of the institution and its marvellous results in the reformation of youthful delinquents. The present investigation is apparently being conducted in a way to get at the actual facts. Thus far the results are reassuring to those who have looked to Elmira as the most successful reformatory in the world, and to the movement inaugurated in this country by Superintendent Brockway as the one reasonable method of turning back the tide of criminality that is rising so rapidly in most civilized countries.

No brief account could possibly give a comprehensive idea of the work done at Elmira. It is a school whose pupils are criminals from the lowest walks of life, illiterate, vicious, seemingly irreclaimable, and whose graduates are men changed in their entire mental and moral attitude—educated, developed, regenerated. The matriculant is a criminal at war with society; the graduate a skilled tradesman ready to go out and earn an honest living in the world. Of the several thousands treated at Elmira, more than eighty per cent. have gone out thus regenerated, and are now living useful lives. This work has made Mr. Brockway famous the world over. The United States Bureau of Education in a recent report says of him that he is "justly recognized in Europe, as well as in America [note the sequence] as the most successful in the actual reformation of the criminal." For the direct practical elevation of the ethical level of our race, Mr. Brockway has perhaps done as much as any other single individual in the world.

But it chances that one part of the admirable system by which Mr. Brockway has achieved such marvellous results includes the application of corporal punishment to wilful misdemeanants, as a last resort. There was never anything secret about this. Such punishment was always administered by the Superintendent in person, after numerous charges had been preferred and proven, and after the misdemeanant had been repeatedly warned and ad-

monished by the Superintendent. A record of the entire case was always kept in the books of the institution, including not only the fact of punishment, but the exact number of blows administered. The published annual reports of the institution described this portion of the reformative treatment, and it was perfectly understood and generally approved by all persons familiar with the work of the Reformatory. But about a year ago a sensational newspaper in New York made the startling discovery of the existence of this method of treatment, and assailed the institution, with the ultimate result of bringing on the investigation already referred to, of which the present investigation is the sequel.

At the beginning of the present investigation the "terrible weapon" with which the spankings were administered was produced. It proved to be a strap twenty-two inches long, three inches wide, and three-sixteenths of an inch thick, weighing, handle included, sixteen ounces—an instrument, one would suppose, admirably adapted to produce a corrective tingling of the cuticle, but utterly incapable of producing the lasting injuries that were alleged to have resulted from its application. These injuries, damaged spines, impaired vision, and what not are rapidly disappearing when subjected to critical examination in the concrete by expert physicians called by the investigating commission, or by the medical member of the commission, Dr. Austin Flint. It is being shown that the inmates who furnished the adverse testimony before are largely malingerers and incorrigibles. One of them is on record in the book of the Reformatory as having committed about five hundred misdemeanors and breaches of discipline, from attempted murder down, during the two years of his stay in the institution. The marvellously exact and explicit records of the institution—in themselves testimony to the great executive ability of Mr. Brockway—when consulted in full and not merely in garbled extracts, have gone a long way toward clearing up the charges made against the Reformatory management. Admissions made by witnesses called for the prosecution have also strengthened the case of the defence. Already the hope is justified that the researches of the investigating commission will lead to a report fully restoring the Reformatory to its place in the public confidence.

PATENT MEDICINES AND THE TEXAS DOCTORS.

THERE are troublous times in Texas again; but the clouds are clearing, and the Lone Star is beginning to filter its pellucid beams anew over a distempered world. It all began from a combination unfortunately made between the *Austin Statesman* and the State Medical Society. The *Statesman* (who does not seem to have quite grown up) published the remarkable assertion that at a meeting of the Society one of the doctors spoke anent patent medicines as follows:

"No doctor who has any consideration for his calling will prescribe a patent medicine compound for a patient. If he is a doctor at all he will write a prescription containing the same ingredients. By this means the druggist is enabled to make his percentage on the prescription and the doctor gets a rebate. Now, if the doctor prescribes a patent medicine, the druggist only gets a small margin of profit, and the doctor gets nothing at all. So, in consideration of this fact, if for no other, a doctor should never prescribe a patent medicine."

Naturally such an avowal as this led to strong denunciations by the editor, of the medical men of Texas and everywhere else, with incidental criticisms of druggists and their business ways. Slander loves a shining mark; but when it strikes the Texas doctors, the mark not only shines, but corruscates, with a blinding brilliancy that wilts, dries up, and utterly defibrinates the slander. The doctors of Austin got together and passed some resolutions, which we publish in full:

"*Whereas*, There recently appeared in the local editorial or reportorial columns of the *Statesman* an article headed, 'The Reason Why Doctors Object to Patent Medicines, as Explained by One of Them,' in which article it is asserted that the writer had heard a delegate on the floor of the recent Medical Convention in this city state in substance, 'That, by writing a prescription for the same ingredients of which a patent medicine is composed, the druggist makes a larger profit and gives the doctor a rebate;' and, further, that he, the said writer, in a conversation with an Austin druggist, was informed by said druggist that 'it is a common practice for doctors to prescribe a small quantity of a patent medicine and have it put up as a prescription, the druggist charging a much larger price for this part of the bottle thus dispensed than the whole bottle would be sold for; and by that means he made a larger profit, and gave the doctor a rebate.' Or, in other words, that this druggist stated, in effect, that doctors and druggists are in collusion to rob their patrons.

"*Resolved*, That the statement that a delegate on the floor of the recent Medical Convention in this city, at any time during its sessions, made any such statement, is false and libellous upon the medical profession; that members of the Austin profession, who were present and heard all the discussion on the subject of patent medicines, assert positively that no such statement was made by any member or delegate at any time, and that no language was used that could, by any honest interpretation, be so construed.

"*Resolved*, That the statement, by whomsoever made, that any reputable physician in this city is, or has been guilty of any such collusion as is in said article attributed to them, is false and libellous; and we assert that no reputable physician asks, expects, or would receive from his druggist any rebate or percentage on his prescriptions.

"*Resolved*, That the entire article is a misrepresentation of facts, and an unmerited insult to the entire medical fraternity of this city and State.

"J. W. MCLAUGHLIN, M.D., President Texas State Medical Association; T. J. BENNETT, M.D., President Austin District Medical Society; Q. C. SMITH, M.D.; S. E. HUDSON, M.D., President Travis County Medical Society; R. M. SWEARINGEN, M.D.; F. E. DANIEL, M.D., Editor *Texas Medical Journal*; A. N. DENTON, M.D.; E. V. HAMILTON, M.D.; T. J. TYNER, M.D."

This resolution not only sets the Texas doctors all right, but lays down the rules of a correct and advanced ethics as regards doctors, druggists, patent medicines, and rebates. The *Statesman* has been shown to be an erring mortal and no better than a Populist; the profession of Texas has been vindicated, and the cause of morals advanced. After a stir in Texas the air is always clearer.

News of the Week.

The Number of Medical Students at the Paris Faculty of Medicine has been steadily increasing until, from 384 new matriculates in 1885–86, the number has reached 719 in 1893–94. Despite this the size of the teaching corps is not increased, and the students do not have sufficient personal instruction from the faculty. Unless something is done, Paris will soon fall still further behind as a great teaching centre.

Prunus Virginiana as a Heart Tonic.—There is yet another drug which I venture to think may be unknown to some of you. That is the prunus virginiana or American wild cherry. My attention was first called to it some years back by an article in one of the journals by Dr. Clifford Allbutt. I can reiterate all that he says in praise of the drug. It relieves the flagging and distended ventricle of the chronic bronchitic, it stimulates the flapping chambers of the anæmic, and it increases the muscular tone in subjects recovering from fever and other exhausting diseases. It is also given with great advantage in the irritable "convulsive" heart of the overworked man of feeble physique. It is especially useful in dilatation of the right heart, whether as a result of chronic bronchitis or of mitral stenosis. I use it more in private than in hospital practice; and perhaps no drug has brought me so much credit.—Dr. Seymour Taylor, in *The Clinical Journal.*

Discovery of the Bacillus of Acute Rheumatism.—A number of the clinical features of acute articular rheumatism have suggested to the minds of many the probability that it belongs to the ever-growing class of infectious diseases. Its acute onset and febrile and self-limited course, its complications, and the frequent involvement of the joints as a complication of many infectious diseases, are regarded as supporting this theory. The careful investigation of a typical case of the disease by Sahli (*Deutsches Archiv f. klin. Med.*, 1893, p. 451), has added the evidence of the bacteria themselves. Endocarditis, pericarditis, and pleurisy were associated with the joint lesions. There was no suppuration. Bacteriological examination disclosed the presence in all the lesions of a micrococcus, identical morphologically and culturally with the staphylococcus citreus, but of very low virulence when inoculated into animals as compared with it. As there was no ground to suppose a mixed infection in this case, Sahli regards this germ as its exciting cause. He is in doubt whether the germ discovered is a distinct species, or whether it is merely a staphylococcus citreus of degenerate virulence. He is inclined to the latter view because of the frequent association of rheumatism and endocarditis, whose intimate relationship to the pyogenic cocci has been repeatedly shown. A note appended to the report of this case states that in several other cases more recently examined, similar cocci of low virulence have been found.

In connection with this account, which is abstracted by Dr. Ely in the *American Journal of the Medical Sciences*, we may call attention to the statement of Dr. Edward Grün of Putney (*Lancet*, May 6th), that he finds the blood in acute rheumatism "charged with bacteria in the form of minute cocci," which are easily stained by a warm solution of methylene blue. We fear that Dr. Grün is troubled with muscæ volitantes. Dr. Lucatello, of Genoa, has shown at the Italian Medical Congress of 1892, cultures of a micro organism which he obtained from cases of acute rheumatism. The microbe was small, round, and neither pyogenic nor saprogenic. Altogether, the evidence is as yet insufficient to place acute rheumatism among microbic diseases.

Another Plea for a National Bureau of Health.—The *Maryland Medical Journal* says, editorially: "Once more it seems necessary to arouse the profession to the importance of using every effort for the passage of a bill in Congress to form a National Bureau of Health. It is only by united effort and by constant appeal to our representatives in Congress that the end will be attained. Not only medical journals, but the lay press of all parties have made a strong fight for the establishment of this bureau; and in our commerce with other countries which protect themselves by sending us their sick and diseased, it is no more than right that we should defend this fair country against disease and pestilence from without. In addition there are filth diseases, like typhoid fever, which spread and do incalculable harm and which, without respect to state and municipal boundaries, spread from community to community, and it is for the better protection against disease both from within and from without that a bureau of health is needed. The general work of such a bureau is shown in the proposed bill, which has already been printed."

The Idaho State Medical Society will hold its second annual meeting at Boise, on Monday, Tuesday, and Wednesday, September 10, 11, and 12, 1894. The officers of the Society are: Dr. W. W. Watkins, of Moscow, President; Dr. C. L. Sweet, of Boise, Secretary.

Dr. Juan J. Ulloa, of San José, who was the official delegate of the Republic of Costa Rica to the Pan-American Medical Congress in Washington, has been appointed Secretary of the Interior and of Public Improvements by the President of Costa Rica. Dr. Ulloa is a graduate of the Medical Department of the University of New York, and after serving on the house-staff of St. Vincent's Hospital, practised for a time in this city.

The Plague in Hong Kong is still on the increase according to advices brought by the steamer Peru. During the week ending June 14th over seven hundred persons died of the pest. Five British soldiers are among the victims. The native inhabitants are fleeing from the city, and it is feared will spread the disease through the surrounding districts.

Dr. E. C. Seguin, of this city, has been elected a corresponding member of the Académie de Médecine of Paris.

Dr. Ezra M. Hunt died on Sunday last in Metuchen, N. J., aged sixty-four. He was a graduate of Princeton College in the class of '49, and obtained his medical degree from the College of Physicians and Surgeons in this city in 1852. He was surgeon to one of the New Jersey regiments during the war, and had previously lectured for a number of years in the Vermont Medical College. Dr. Hunt was very prominent in health matters in New Jersey, and had been secretary of the State Board of Health from the time of its organization in 1878.

Society Reports.

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 799.)

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held in Washington, D. C., May 30, 31, and June 1, 1894.

FIRST DAY, WEDNESDAY, MAY 30TH.

President's Address.—DR. D. BRYSON DELAVAN, of New York, said that the object of his address was to review the history of the Association, study the means by which it had attained success, estimate its present, and finally investigate the methods by which its mission of usefulness for the future might be most surely and successfully accomplished.

The history of the Association was intimately related to that of laryngology, for Manuel Garcia was still living and one of its Honorary Fellows. It was a pity that Horace Green, who had been the actual leader of the world in the study of diseases of the throat, should not have lived to see the Association established. The laryngoscope was said to have been introduced into this country in 1860. By 1878 its use was being taught in twenty different institutions, and the specialty at first opposed by the general profession had gained a respectable position. The American Laryngological Association was formed in 1878. The motives which actuated its founders were eminently philanthropic and ambitious. The society has been completely successful. Its meetings had been held regularly, they had been well attended and the scientific work done had been of a high order, and the discussions have been remarkably valuable. Its fifteen volumes of transactions were a great credit to it. They contained over three hundred and thirty papers. Meanwhile ten years elapsed before the example of the Association was followed. In 1888 the British Laryngological Association was formed by Sir Morell Mackenzie, and later associations have been started in France, Belgium, Italy, and Holland. Local laryngological and rhinological associations have greatly increased in numbers of late years. The first of these was the New York Laryngological Society, founded by Dr. Clinton Wagner in 1873, and since merged into the very successful Laryngological Section of the Academy of Medicine. Successful local societies exist also in London, Berlin, and other centres. The latest ones have been established in Philadelphia, and Buda-Pesth. Wherever such societies and associations have been established, their influence has been elevating and inspiring, as shown in the improved quality and amount of the scientific work done and in the general tendency toward higher planes of professional education and culture. It is satisfactory that this movement should have been started, and at so great a distance in advance, in this country. The knowledge of this, however, should only serve as a spur to greater exertion on our part.

The American Laryngological Association has always held a leading place in the general and journalistic literature of the specialty, the *Archives of Laryngology* having been one of the first special journals ever published. The influence of the Association upon its members has been stimulating and salutary and has resulted in great good to many. The great function of the society in the past has been that of a teacher. Herein lies its greatest hope of usefulness for the future. It is a teacher of teachers, and as such should not confine itself to laryngology alone, but should pay some attention to the study of pedagogy, as it relates to this department. This has always been carefully considered by our Association as it relates to undergraduate instruction. Of late a great advance has been made in medical instruction in the establishment of graduate schools. This movement, together with the great increase in the literature of the subject, has given to laryngology a startling popularity, and the multiplication of the number of practitioners who assume to treat diseases of the throat has been very great and has called loudly for increased and improved facilities for instruction. This want has been met by the graduate school, which, first started in New York, has become a recognized factor in education all over the country. The greatly diversified nature of graduate students as to age, general and special education, makes the problem of their suitable instruction a difficult one. The theory of graduate instruction in this country is a triumphant success. How, then, can we best attain the practical ends demanded by it? The answer to this was first given by Dr. Elsberg, the Association's first president, who was the first and best to enter this field.

The most important factors in the improvement of graduate instruction are: 1. A higher and more general education on the part of the student. 2. A modification of the best undergraduate methods to suit the needs of the older men. 3. More careful selection of instructors. The future of the Association is bright and promising. It has attained success in the past only by the exercise of much labor and careful attention to its best interests. It would be unwise to lower its standards in any way. The dangers which threaten any such institution are—lack of interest on the part of its older members; the multiplication of other societies; and worst of all, the introduction of politics and the desire of self-aggrandizement. We cannot believe that such dangers can threaten us so long as we live up to the principles upon which the society was founded.

A great change has taken place in late years in the matter of special work, and larger numbers of men are engaged in it than ever before. If, in this vast extension of knowledge, our standards are to be lowered, and work not of the worthiest accepted at equal value with the best, the results will be disastrous to the advance of true science. Such a calamity we are unable to foresee. Outside competition will only stimulate to higher attainment and higher skill, while from the vast body of new aspirants must arise men who will penetrate still more deeply into the hidden recesses of nature. With the progress of science in our department the American Laryngological Association is intimately associated and largely responsible. It is to be hoped that it will respond to the demands made upon it.

Nasal Polypus; Its Association with Ethmoiditis and Its Treatment by Resection of the Middle Turbinated Body.—A paper with this title was read by DR. W. E. CASSELBERRY, of Chicago. An analysis of forty cases confirms the view that nasal polypus is but a symptom or concomitant of other nasal maladies, the most frequent being various forms of ethmoiditis. Two previous papers by the author are reviewed, in the first of which he advised a vigorous surgical treatment having for its object first access to and then eradication of the actual seat of attachment, most frequently in the immediate vicinity of the hiatus semilunaris. For eradication of the attachments, upward beneath the middle turbinated body, he has recently substituted for the cautery point, before recommended, a small sharp curette with which the borders of the hiatus and the bulla ethmoidalis are well scraped.

In a supplementary paper in 1891, he advised, as part of the radical treatment, the removal of the antero inferior part of the middle turbinated bone, in order to give freer access to the actual points of development.

Additional experience with this operation has but confirmed its utility and demonstrated its harmlessness. The middle turbinated body, a process of the ethmoid bone, is rarely itself in a healthful condition in these cases, a phase of the subject which is amplified in the present paper. Furthermore, it appears from the cases reported as typifying the various forms of associated ethmoid disease,

that polypus is commonly one of the earliest prominent manifestations of ethmoiditis, and resection of the middle turbinated bone, in addition to its efficacy for the polyps themselves, is regarded as a prophylactic measure against the development of the more serious suppurative type of ethmoiditis and infection of the maxillary, frontal, and sphenoidal sinuses, by facilitating drainage from the ethmoid cells.

A clinical classification of the various conditions which are found associated with and underlying the formation of nasal polypus is deduced from the analysis of forty cases, and a case typifying the characteristics of each group is detailed.

Type I.—*Nasal Polypus with Hypertrophic Rhinitis.*—This is characterized by simple enlargement of the inferior and middle turbinated bodies and without evidence of ethmoiditis other than the suggestiveness of the polyps. Drainage is defective, and the accumulation of mucopurulent secretion in the middle meatus seems to encourage polyp growth. Recovery without recurrence follows removal of the polyps and reduction of the hypertrophied turbinated bodies by the cautery. Only six of the series of forty cases were of this type.

Type II.—*Nasal Polypus with Simple Myxomatous Ethmoiditis.*—This is characterized by great enlargement of the middle turbinated bodies, which have a glistening aspect and a pultaceous touch indicative of œdematous or myxomatous degeneration; pressure in the ethmoid region, productive at times of infra orbital swelling and broadening of the base of the nose.

After resection of a considerable part of the middle turbinated bone the muco periosteum of the parts of the ethmoid bone thus exposed—the borders of the hiatus, bulla ethmoidalis, etc.—is found in a state of myxomatous degeneration and covered by polypoid excrescences, the same extending upward into the ethmoid cells.

Fourteen of the series of forty cases were of this nature, and five of them were subjected to the operation of resection of the middle turbinated bones.

Type III.—*Nasal Polypus with Vaso-Motor Ethmoiditis.*—This is regarded as a variation of Type II., and presents the same evidences of myxomatous degeneration of the muco-periosteum of the ethmoid region. In addition, asthma was a universal symptom, which, to some extent, influenced the grouping together of these particular cases, under the conviction that asthma of this variety is caused by a similar vaso-motor tumefaction of the bronchioles.

The group comprised nine cases, and four of them suffered from hay fever, which further indicated the possession of a fundamental neurotic habit. They were all affected by supersensitiveness to the extent that various irritants, such as dust, coal smoke, fog, aroma from horses, etc., would suffice at any season to excite a form of nasal tumefaction suggestive of vaso dilatation, and in most cases the ethmoid region seemed especially sensitive.

Type IV.—*Nasal Polypus with Suppurative Ethmoiditis.*—This is characterized by a purulent discharge from the ethmoid cells, co-existing frequently with empyema of the maxillary, frontal, and sphenoid sinuses. It is regarded as a sequel to Type II. or Type III., suppuration occurring only after myxomatous tissue has accumulated sufficiently to obliterate the natural drainage channels, which view is substantiated by a case in which suppuration of the frontal sinus occurred in conjunction with obliteration of its outlet. This group comprises six cases, of which five were subjected to resection of the middle turbinated bone on one or both sides, in addition to other measures.

Type V.—*Nasal Polypus with Necrosing Ethmoiditis.*—Dr. Woakes' contention that nasal polypus indicated a chronic inflammation of the ethmoid is in large measure substantiated; but that necrosis or even caries of bone is a "usual" accompaniment is not confirmed, so that it would seem wise to limit the term "necrosing ethmoiditis" to the class of cases in which necrosis or, at least, caries, actually exists. Only five cases were accompanied by unmistakable necrosis of bone.

Concerning the technique of resection of the middle turbinated bone, the author has devised curved serrated scissors with which to cut the bone for a variable distance backward, when the operation, if not complete, can be finished by the snare or sharp forceps. The resection need not be completed at one sitting, but is more often accomplished fragment by fragment, the latter method alone succeeding when the middle turbinated body is greatly enlarged and closely impacted within its space.

Conversely if the middle turbinated body be of normal contour and present no impediment to drainage, to the transmission of light or instruments, there will then be no occasion to interfere with it.

This paper was discussed by Drs. W. H. Daly, of Pittsburg; F. H. Bosworth, of New York; J. H. Bryan, of Washington; J. N. Mackenzie, of Baltimore; F. W. Hinkel, of Buffalo; W. Peyer Porcher, of Charleston; J. C. Mulhall, of St. Louis; Jonathan Wright, of Brooklyn, and C. C. Rice, of New York. These gentlemen all agreed on the main features of their remarks. Overzealous surgery in the nose should be avoided. One case of severe hemorrhage has resulted. In one instance, immediately after removal of the turbinated, severe parietal pain was felt in the head. The patient became demented and died of cerebral abscesses. The heart could not be examined at the autopsy and it is possible that the brain lesions in this case came from a cardiac embolus, though the patient had always been in the best of health previously. Acute cases of ethmoidal trouble will often subside under local antiphlogistic measures; but in the chronic cases it is useless to expect a cure without radical operative procedure.

Papillary Hypertrophy of the Nasal Mucous Membrane.—Dr. Jonathan Wright, of Brooklyn, N. Y., presented a paper entitled "Papillary Hypertrophy of the Nasal Mucous Membrane Compared with a True Papilloma." The writer stated that there was much confusion in the literature of rhinology, from the loose use of the term papilloma as applied to intranasal excrescences. Hopmann has described a pathological formation, which the Germans speak of as papilloma, but it is not true papilloma at all. Such growths in the nose are rare.

Dr. Wright exhibited drawings illustrating the difference between the two conditions named in the title of his paper. The nasal growth was removed from the middle of the inferior turbinated bone and the true papilloma from the uvula. The latter consisted of a thick stem with irregular sprouts,—some simply conical, springing directly from the central stem, but the larger number again divided into stems and sprouts, the whole looking like a budding tuberous vegetable. A drawing of the nasal growth showed a symmetrically rounded mass, divided by cross lines into more or less regular portions resembling the "mulberry" hypertrophy, so frequently seen on the posterior ends of the inferior turbinated bones. The mass was sessile, but movable, and removed by a cold snare. Although the operation was prolonged over nearly an hour, severe hemorrhage resulted three hours later. As contrasted with the true papilloma, almost any fold of the nasal specimen communicated with the central mass, without any appearance of a "budding" process. The line of surface epithelium was not especially thickened or irregular. The papilloma was without glands, had only small capillaries, and a slight branching framework of connective tissue. The latter was covered everywhere by a large number of regularly situated layers of flat, epithelial cells. The papillary hypertrophy consisted of all the constituent parts of the mucous membrane of the inferior turbinated body. The dilatation of the venous sinuses was especially marked. Glands were present, but scanty. The fibro-connective tissue was greatly increased. This, at the periphery, was divided into regular processes covered by epithelium, and separated from each other by depressions giving a nodular

surface. These growths are papillary hypertrophies of the erectile bodies of the inferior turbinated bones. These enlargements result from a continuous and exaggarated contraction and dilatation of the sinuses in a stroma deprived by chronic inflammation of much of its elastic and muscular structure.

Metallic Electrodes in Nasal Disease.—Dr. C. C. Rice, of New York, next read a paper entitled "The Use of Metallic Electrodes in Nasal and Post-Nasal Disease." His plan of treatment is to make the positive electrode of the circuit of some such substance as copper. When the current passes, the metal is dissolved, and a new metallic salt, the oxychloride of copper, is formed and carried through the tissues by kataphoresis. Allusion was made to the experiments of Gautier, Morton, Cleaves, and others along this line. There was no proof that the action of the salt was germicidal. It was claimed that the new salt was actually carried into the tissues, that it was in this way more efficient than a solution of the substance applied to the surface, and that the pathological foci, being beneath the surface, were thus more effectually reached. Part of the advantage was undoubtedly derived from the current itself and from its own electrolytic action upon the tissues. He had found the treatment especially satisfactory in various forms of nasal disease where, succeeding the removal of all offending material, there was a continuous hypersecretion. Enlarged turbinates could be punctured with a copper needle, the negative electrode being a flat sponge on the nape of the neck. Succeeding the current was a temporary coryza, which usually disappeared in twenty-four hours. He had found the copper needle preferable to the cautery in epistaxis from eroded spots on the nasal septum. Out of twenty cases of these various ailments he had cured six, and benefited fully three quarters of the remainder. Paper discussed by Drs. Wright, A. W. de Roaldes, of New Orleans, J. O. Roe, of Rochester, Daly and Casselberry. All these gentlemen were unanimous in doubting the accuracy of the various milleampère metres which are necessarily used in the foregoing electrical procedure, and doubt was also expressed as to the distinct effect of the metallic salts as apart from the general stimulating one of the current itself.

ASSOCIATION OF AMERICAN PHYSICIANS.

Ninth Annual Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

Second Day, Wednesday, May 30th.

Modification, Temporary and Permanent, of the Physiological Characters of Bacteria in Mixed Cultures.—Dr. Theobald Smith, of Washington, D. C., read a paper with this title. The variability of species of bacteria is a most important subject. The changes in virility by passing through animals, and by heat or chemical agents, are well known. The objects of these studies are to determine the modification of bacteria when grown in mixed cultures. In 1890 the accidental association of *proteus vulgaris* with a pathogenic bacillus (*B. choleræ suis*) in an agar culture produced, within a few months, a very marked reduction of the pathogenic powers of the latter. Repeated trials with mixed cultures confirmed this observation. A return of the original virulence of the pathogenic species was noted after it had been cultivated by itself; but this return was preceded by a prolonged period of attenuation, lasting in one instance about nine months.

These results suggest the possible modification of pathogenic and aprophytic species in the soil by similar agencies. They also throw some light on the extent of the mutually destructive action of different species accidentally vegetating together. Dr. Smith detailed at length his experiments. He grew the bacilli of hog cholera alone, and mixed with the proteus vulgaris. He also maintained a pure culture of the proteus. The result upon the proteus of growing in conjunction with the hog-cholera bacillus, was the evolution of a variety resembling the proteus mirabilis and proteus Zenkeri of Hauser.

Dr. Sternberg, of Washington, said that a few years ago every bacillus that differed a little in its action was considered a different species. Now we know that many are varieties of each bacillus. Whether the variations go so far as to produce species which will not revert, we do not know. He said that he had been much misled by this during his studies in Cuba.

Dr. William H. West, of Baltimore, said that the tendency now was to identify species of bacilli by morphological rather than by physiological characteristics. He said that the hog-cholera bacillus in the laboratories of Germany was probably a different species from that which had been under observation in Baltimore. He considered Dr. Smith's contribution valuable.

Dr. Smith closed the discussion.

The Effect of Various Metals on the Growth of Pathogenic Bacteria.—Dr. Meade Bolton, of Baltimore, said that some metals seem to have no influence upon the growth of the bacteria, while others have a more or less marked inhibitory action, as shown by a broader or narrower clear zone around the pieces of metal on plates otherwise crowded with colonies of bacteria. Just outside the clear zone, whether this is broad or narrow, there is, in nearly every case, a zone of intensified growth where the colonies are thicker than on other parts of the plate.

In the few tests as yet made for this purpose, there was entire absence of living bacteria in the clear zones. Inoculations from the clear zones remained sterile.

In some cases there are three zones around the metals, viz.: A clear zone immediately surrounding the metal; a zone of intensified growth, and a second narrower zone where growth was inhibited. It has been possible to detect in the medium, by chemical reagents, the presence of traces of those metals that exert inhibitory power. The solution of the metals in the nutrient medium takes place independently of the growth of bacteria, as it is possible to detect the presence of the metals in sterile media in which they have been placed, after they have lain for a few days, at any rate. A discoloration of the medium surrounding the metal, often makes a special test unnecessary.

Some metals have a much more powerful inhibitory action than others, as is shown by the broader clear zone. There is also some difference in the different bacteria with one and the same metal.

Some of the metals that have been tested were absolutely pure; others were commercial metals, marked chemically pure, and a few were either impure or alloys. Silver has a marked action. Hence silver wire sutures are less apt to give stitch abscesses than sutures of other material.

Notes on the Observation of Malarial Organisms, in Connection with Enteric Fever.—Dr. W. Gilman Thompson, of New York, called attention to the possibility of a double infection with malarial and typhoid germs. A typical case of typhoid fever lasting fifty-five days, with eruption, tympanites, and hemorrhage from the intestine, complicated by chills and hyperpyrexia, during the third week, with appearance of malarial organisms. Two other typical cases of enteric fever, with the observation of malarial organisms, which appeared in connection with chills during convalescence. Rarity of the mixed infection in the vicinity of New York, which is common in the South.

Dr. Osler, of Baltimore, said that chills in typhoid were common apart from malaria. He exhibited a chart of the only case of this mixed infection that had been seen at the Johns Hopkins Hospital. He related a case of mixed infection of pneumonia and pneumia.

Dr. F. P. Kinnicutt, of New York, related a case which was mistaken for typhoid, but which was proved to be malarial.

Dr. G. L. Peabody said that chills in typhoid were sometimes pyæmic, and these were of more importance.

He believed that the frequency of "typhomalaria" was exaggerated by many.

Dr. E. G. Janeway, of New York, said that he had often seen chills in typhoid due to the administration of antipyretics.

Dr. Sternberg, of Washington, said that the so-called "typhomalaria" was not such as was shown by the author, but cases which, being mistaken for malaria, afterward turned out to be typhoid. The physician, to save his reputation, added his final diagnosis to his provisional diagnosis.

Dr. J. C. Wilson, of Philadelphia, said that the name "typhomalaria" was unfortunate, in that it interfered with prophylaxis in typhoid cases.

Dr J. H. Musser, of Philadelphia, reported a case of mixed infection of scarlatina, measles, and intermittent fever.

Dr. H M. Lyman, of Chicago, and Dr. W. T. Councilman of Boston, reported cases bearing on the subject.

Dr. F. C. Shattuck, of Boston, said that chills in typhoid might be due to phlebitis of inaccessible veins.

Dr. J. C. Reeves, of Chattanooga, believed in a fever intermediate between typhoid and malaria.

Dr. George Dock, of Ann Arbor, had made autopsies on many cases of typhomalarial fever, and had found typhoid lesions.

Dr. Thompson closed the discussion by emphasizing the importance of examining the blood of fever patients for malarial organisms.

Experiments in Artificial Melanosis.—Dr. George Dock, of Ann Arbor, Mich , read a paper with this title. Investigations in cases of malarial fever with great pigmentation, show some departures from the changes that have been described as the result of injecting finely powdered substances (cinnabar) into the circulation. The object of the present series of experiments was to control the older observations, and to observe especially the behavior of the various kinds of leucocytes, as known by modern methods, to the foreign bodies. The animals used are dogs and rabbits; the substance injected, lamp-black suspended in normal salt solution. At this time the experiments are not finished, but have gone far enough to say that the changes found are not identical with those in malaria. The greatest difference is the slight participation of the macrophages in the experimental cases, as compared with malaria. The other observations as to the localization of the pigment were confirmed.

Some of the Chemical and Bacteriological Characteristics of Milk.—Dr. Thomas M. Rotch, of Boston, dwelt upon the importance of reaction in milk, in infant feeding. By feeding cows on sugar-beets in addition to other food, the milk was rendered alkaline. Alkaline milk is more like human milk than that usually obtained. Cows milked under antiseptic precautions gave the following results: First half of milking showed bacilli. Milk drawn with a sterile cannula was practically sterile. Hence the conclusion is drawn that the bacilli came from the tract between the udder and the end of the teet. In this way sterile milk is obtainable.

Dr. F. Forchheimer, of Cincinnati, O., said that the extreme importance of the subject merited further investigation.

Dr. T. Smith, of Washington, agreed with the author.

Dr. Rotch closed the discussion.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-fourth Annual Session, held in Philadelphia, May 15, 16, and 17, 1894.

First Day, Tuesday, May 15th.

The Society was called to order by the president, Dr. H. G. McCormick, of Williamsport, Pa. After an opening prayer by Rev. A. B. Philputt, an address of welcome was given by Hon. Edwin S. Stuart, Mayor of Philadelphia. He recalled the fact that the first hospital for the treatment of the sick was inaugurated in Pennsylvania on the application of Benjamin Franklin, and was erected in Philadelphia, and from that time until now it has been doing excellent work. The first medical school and the first school of anatomy were also located in Philadelphia. Some time ago the city contained many colleges which were a disgrace to it, but those have now been wiped out,

The address of the Mayor was followed by one of welcome by Dr. E. E. Montgomery, of Philadelphia, chairman of the Committee of Arrangements.

Reports were made by the secretary, Dr. William B. Atkinson, and the Treasurer, Dr. G. B Dunmire. Dr. Atkinson said there were now fifty county medical societies in good standing, and that the State Society had at present two thousand five hundred members. The treasurer reported a total of $4,122.24 received for 1894. and expenses amounting to $2,423.45.

Dr George M Gould then presented a resolution calling upon the Legislature of Pennsylvania to adopt the law for the prevention of blindness in infants, recommended by the Committee of the Section on Ophthalmology of the American Medical Association adopted by the Legislature of the State.

Address in Surgery.—Dr. G. D. Nutt said success in many operations is often modified by the time when and place where such operations have to be performed. A great responsibility rests upon the family physician in many of those diseases of a purely surgical nature or tending that way. He is usually the first to see these cases; and unless an early surgical consultation is called, the time may pass when an operation can be safely performed. Many fallacies are taught in our text-books that have been proven false by modern surgery, which the general profession are slowly but surely accepting.

Modification of Pirogoff's Amputation.—Dr. F. Le Moyne read a paper with this title, advocating the preservation of the malleoli and the excavation of the retained section of the calcis at a point to correspond with each malleolus, with the object of gaining about three-fourths of an inch in the ultimate length of the limb, and procuring more accurate and permanent coaptation.

Psoriasis.—Dr. George V. Shoemaker showed cases illustrative of the etiology of psoriasis. Two of the cases were frankly rheumatic, two probably of arthritic tendency, and the fifth was the subject of chronic gastro enteritis. Dr. Shoemaker explained that psoriasis is often excited by the presence of rheumatism or gout, while in other cases it depends upon chronic disturbance of the digestive organs, disease of the liver, disorders of the blood, and maladies of the nervous system. He also explained that the appearance of the papules, patches, and scales, is characteristic and typical, whatsoever the cause. The facts relating to its etiology are most significant guides to treatment. In each case we must endeavor to ascertain the origin. Though the lesions present exactly the same appearance, the therapy must obviously differ in accordance with the etiology, and routine treatment of psoriasis is an impossibility. The defects of digestion and nutrition must be corrected; constitutional and approximately specific remedies must be administered, or the state of the nervous system must be improved. The habits of the diet must be regulated or changed. The Doctor asserted that ingestion of thyroid glands is a mode of therapy serviceable in certain cases. The grand principle of treatment is to determine the origin of each case. Acting upon this belief the Doctor lays comparatively little stress upon topical treatment. Dr. Shoemaker said that increasing experience convinced him that accuracy in tracing the genesis of the disease pointed to an internal therapy, upon which could be placed the reliance of the profession more firmly than upon local measures.

Organic Stricture of the Urethra.—Dr. Orville Horwitz, in a paper with this title, called attention to the fact that dilatation should be employed in all cases of recent strictures which are dilatable, occurring in any portion of the urethra, and which are not either resilient, irritable,

or nodular. This treatment is by far the safest in persons suffering from disease of the heart or kidneys, or diabetics who are broken down in health, who are suffering from debility, or who are advanced in years.

Continuous dilatation was recommended as an adjunct to other more radical means of treatment. It should be employed in tight strictures of the membranous portion of the urethra, complicated with retention of urine, and in those cases where the stricture is of small calibre, when located in the fixed portion of the canal; the patient is thus enabled to pass water with sufficient ease to allow him to be prepared for radical operation.

Modified rapid dilatation was advised for the treatment of filiform strictures, situated in the neighborhood of the bulbous and membranous portions of the canal, which are neither irritable, nodular, nor resilient, and which cannot be treated by gradual dilatation.

Internal urethrotomy should be limited to well-organized strictures, situated within from three and a half to four inches from the meatus.

Strictures at the meatus, or in the neighborhood of the fossa navicularis, should be divided on the floor of the urethra, especially if they give rise to reflex symptoms.

Dilating internal urethrotomy should be limited to strictures that are well organized and of long standing, within from three and a half to four inches from the meatus, which are nodular or resilient.

This operation should not be performed on those who suffer from impotence, neurasthenia, nocturnal emissions, or sexual hypochondriasis.

In these cases ordinary internal urethrotomy, by the Gross instrument, is advised. Combined internal and external urethrotomy is commended in nodular strictures of the penile portion of the urethra, and in strictures of the bulbous portion of the canal. External and internal urethrotomy, with or without a guide, is advised under the usual conditions.

Electrolysis was not recommended.

Cramming in Medical Schools.—Dr. Oscar H. Allis, surgeon to the Presbyterian Hospital, stated that the lengthening of the term of study of medical schools had increased the number of professors, many of whom were not authors, and this made note taking indispensable. That as there was no time for the student to do this, it made it imperative that he place himself under a quiz master throughout his entire course. That between lectures, laboratory work, hard work, demonstrations, clinics, and quizzing, he must put in between sixty and seventy hours a week. The average class room work in schools, colleges, and seminaries, he said, was three hours a day for five days. The speaker complained that men in medical schools were compelled to take a three or four years' course, spend hard-earned or borrowed money for lectures and maintenance, and be "plucked" at the last moment. Every man in the seminary or school who is diligent and moral gets his degree. Ten per cent. of the medical students fail. If a rigid entrance examination were instituted, many of those who fail would be arrested at the outset.

It was urged that some return should be made to those who fail; that if medical schools were compelled by law to return the fees for instruction, the number of graduates would not be diminished, but the ten per cent. who now fail would stand on a different footing. Such a course would compel medical schools to compare their requirements, their methods, and courses of study, with other institutions of learning. In literary institutions class-room work counts more than final examinations. In medical schools the professor knows little of the student, class-room work has little influence, and the final examination decides the fate of the applicants. Dr. Allis declared that good, faithful men are thus often sacrificed.

Second Day, Wednesday, May 16th.

Election of Officers.—The session was called to order by the president, and the report of the Committee on Nominations was announced as follows: *President*, John B. Roberts, of Philadelphia; *First Vice-President*, Dr. S. C. Stewart, of Clearfield County; *Second Vice President*, Dr. J. A. Lippincott, Allegheny County; *Third Vice-President*, Dr. J. H. Wilson, Beaver County; *Fourth Vice-President*, Dr. R. Armstrong, of Clinton County; *Secretary*, Dr. William B. Atkinson, of Philadelphia; *Assistant Secretary*, Dr. H. G. Critzman, of Franklin County; *Treasurer*, Dr. G. B. Dunmire, Philadelphia County; *Delegates to New York State Medical Society*, Dr. I. W. Groff, Montgomery County; *New Jersey Society*, Dr. C. A. Rahter, Dauphin County; *Maryland Society*, Drs. A. C. Wentz, of York, and P. R. Kcons, of Cumberland County.

Address in Medicine.—Dr. W. S. Foster, of Pittsburg, read the annual address in medicine. He said that recent advances in medical practice have been the crystallization of therapeutic measures by slow processes as compared with the picturesque leaps and bounds that have characterized surgical practice, and that tuberculin and cerebrin have been equally fatuous attempts at rapid advance; the first, a legitimate and therapeutic attempt, the last, a palpably fraudulent scheme. The recurring popularity of calomel and other mercurial compounds and renewed use of digitalis in the continued forms was commented upon. Pure oxygen was recommended as worthy of trial in pneumonia where the respiratory area is greatly encroached upon. The routine use of antipyretics was condemned as irrational. In the use of anæsthetics, Syme's principles were mentioned as being again recognized as the correct ones for the guidance of the physician. Ether was declared equally as dangerous as chloroform, while its after-effects upon the emunctory organs, it was asserted, make it an agent to be used with the greatest caution.

Christian Science in its Relation to the Medical Profession.—Dr. Hildegarde H. Longsdorf, of Carlisle, read a paper with this title. The subject, he said, was more important than it might at first sight appear, even contemptible, yet from the proneness of the uninformed to exaggerate and mystify disease all remedial agencies carry with them an overpowering influence, and to the younger practitioner especially are baffling and vexatious. Christian science was probably the most pretentious and certainly the most successful of the outgrowths of our modern high-pressure civilization, which, not content with its acknowledged empire over material nature, must enter the realm of psychological phenomena and call upon a too credulous public to believe what it cannot explain and revere what it cannot comprehend. There have been many such mock systems in former years. Christian science, however, goes a step beyond any of its forerunners, is one shade finer and more plausible in its theory, and more conspicuously successful than any similar intellectual epidemic the world has ever witnessed. These fatuous misbeliefs are the intellectual scandal of the age, and it becomes a puzzling question how to regard those who honestly believe in them, and what should be the attitude of the physician toward those who aspire to the office of healer.

If it were not for the fact that the doctrine is rapidly spreading, gaining friends and influence among the most intelligent classes, the subject might well be dismissed with a smile as one more of the numerous phases in which the ever-restless mind has manifested itself. But it has a vast and increasing power, and not only among the uneducated. It has its representative literary journals, and an array of special agents or missionaries, a respectable showing of institutions or metaphysical colleges, and a vast number of private establishments for the cure of every disease under the sun.

The question arises, how are we to regard it and how we are to be armed against its inroads? It would be out of place to argue against mental cures, and it would be idle to deny the power of mind over the body, but the fact remains that the process cannot be rationally explained so that the subjects of it can clearly understand it.

Consequently, in endeavoring to maintain our professional self respect we are in danger of becoming illiberal, narrow minded, and dogmatic. The importance of some definite restraining force for these abuses can scarcely be overestimated, and if public opinion and the advanced philosophical science of our era have been powerless to effect this, it would seem to come into the province of legislative enactment.

Should the Journal of the American Medical Association be Used to Promote Quackery?—Dr. S. S. Cohen read a paper with this title, which was an arraignment of the trustees of the *Journal of the American Medical Association* for persisting in publishing advertisements of secret nostrums, contrary to the unanimous resolution of the association in 1892.

After Dr. Cohen's remarks a series of resolutions forwarded to the State Medical Society by the Philadelphia County Medical Society, urging that action be taken to have such unethical advertisements excluded from the *Journal of the American Medical Association* were discussed. These resolutions have all been printed in various journals to which they were sent at the time of their original adoption by the Philadelphia County Medical Society.

Dr. Thomas then offered a resolution, which was adopted, that the resolutions of the Philadelphia County Medical Society on this subject be sent to each trustee of the Journal and that the delegates of the Society be instructed to present them at the meeting of the American Medical Association in San Francisco next month, and that the trustees be informed that it is the sense of this Society that they would prefer to have the publication of the Journal discontinued if the money received for such improper advertisements is requisite for its continuance.

A resolution was adopted also to the effect that if the funds of the association will not permit the Journal to be published without a violation of the code of ethics, the trustees cease it publication.

Croup and Diphtheria.—Dr. B. H. Detwiler, of Williamsport, spoke of the pathology and treatment of membranous croup and dwelt largely on the importance of an early diagnosis of it from the croup of diphtheria. Dr. Detwiler asserted that diphtheritic croup has a mortality of sixty to eighty per cent. and that the phlogistic treatment which he advised had absolutely no mortality record. He dwelt upon the duality of the two diseases, making the anatomical construction of the ciliated epithelium tissues of the vocal dorus and the squamous epithelium of the pharynx and fauces and their inflammatory products the diagnostic signs of duality. His plan of treatment is to produce free depletion by leeches after cyanosis begins, with revulsion by cantharidal blisters and calomel in quarter-grain doses every half hour till the spinach stools are voided.

The Operative Treatment of Muscular Asthenopia (Heterophoria).—Dr. Charles Hermon Thomas read a paper with this title. A number of illustrative cases were reported which showed the extremely varied character of the symptoms and the favorable results of operation. The subjective symptoms of asthenopia show almost no distinct characteristics pointing to their origin, whether refractive or muscular; the same headaches and the same sense of eye strain are complained of under both conditions. Graduated tenotomy (partial) is practicable and efficient because of the elasticity of the margins of the tendons. Muscular asthenopia may present symptoms of all grades of importance, from the slightest to the most serious. As in refractive, so in muscular asthenopia the gravity of the symptoms bears no constant relation to the amount of the physical defect or muscular error. As much—and very much the same kind of—relief is to be expected from the correction of muscular anomalies as from the correction of errors of refraction and accommodation, as might be expected from the similarity in the symptoms. The muscular condition in every case should, as a matter of routine, be as carefully investigated as are the media, eye ground, the refraction, and the amplitude of accommodation.

An Epileptic Colony.—A resolution was offered and adopted that it is the sense of the Medical Society of the State of Pennsylvania that an epileptic colony should be established for the benefit of those epileptics whom the commonwealth is obliged to support, and for others supported by their friends. Copies of this resolution to be sent to the governor, speaker of the House, and president of the Senate, and to the president of the State Board of Charities.

Dr. H. G. McCormick, president of the State Board of Examiners representing the Medical Society of the State of Pennsylvania, announced that the first examination under the new law for license to practise in Pennsylvania would be held on June 11th, in Philadelphia and Pittsburg respectively, the same questions being given to all applicants at both cities.

A resolution was adopted urging Congress not to diminish the usual appropriation for the support of the Library of the Surgeon General's Office at Washington.

Address on Mental Diseases.—Dr. T. M. T. McKennan, of Pittsburg, read the Annual Address on Mental Diseases. A statement was made of the progressive advancement in hospitals for the insane, and especially in the education and training of nurses. The toxic origin of many of the insanities was dwelt upon and especial attention called to auto-intoxication as a factor in the etiology of insanity. The influence of gynecological operations and pelvic diseases in women in causing insanity were touched upon. The relation of syphilis to general paralysis of the insane was dwelt upon, and the great probability, amounting to almost positive proof, of the syphilitic origin of general paralysis. Trianol and duboisine were spoken of as two new hypnotic agents of value, and electricity as a valuable therapeutic agent.

Studies in Obstetrics and Gynecology.—Dr. Anna M. Fullerton in this paper presented her views as to the most frequent causes of pelvic disease, and the resultant decrease in the child bearing capacity of civilized women. The opinions advanced were founded upon the observations made by her during eight years of service as physician in charge of the Woman's Hospital of Philadelphia. The teaching that the majority of pelvic diseases are of microbic origin was upheld; and the vulnerability of the woman of the day to such diseases was shown to be the result of general debility of all the tissues in consequence of the physical and mental strain induced by the habits and requirements of modern life.

The remedy for this evil was felt by the writer to lie in a clearer understanding of the laws of reproduction as affected by the changed conditions of civilization; and especially in the higher education of women, in order to give them a proper appreciation of physiological and educational laws, and thus better fit them to act as guardians over the pre natal as well as the post natal influences affecting the well-being of the child.

Whooping-Cough.—Dr. W. C. Hollopeter spoke of the need of a specific for this specific disease, for as such he regards it. He said that by most authorities this disease was regarded as the most fatal of all the diseases of children under one year of age. This fatality is not limited to the first year of life, but continues to manifest itself long after this period in broken health of all kinds referable to the respiratory, intestinal, as well as the various glandular organs. The speaker placed considerable value on the peculiar puffiness of the mucous membrane of the eyes and the swollen or œdematous condition of the whole of the face, almost dusky; this condition may exist for days before the catarrhal symptoms have extended throughout the respiratory mucous membrane. The cough at this stage may not be at all suggestive—it may be, in fact, purely bronchial. This symptom of fulness about the eyes, which is quite as constant in measles as in pertussis, and with measles it is closely associated and must be differentiated. As measles are diagnosed by the appearance of the eruption first on the

hard palate, so, he contended, whooping-cough may be diagnosed in its earliest stage by the characteristic swollen condition of the eyes and face. He insisted upon this factor as of the greatest importance, as its recognition will enable the physician to institute specific treatment early, when the disease is yet local and may be brought more speedily under control. The drugs he has found most efficient in the catarrhal stage have been hydrogen peroxide in sterilizing the naso-pharynx, and assafœtida occasionally used for the paroxysms. Belladonna also is to a high degree beneficial in young children, and should be placed first. This he pushes until toxic effects are secured, when less suggestive characteristics of the cough are observed.

Amputation near the Ankle.—Dr. G. G. Davis, of Philadelphia, showed four cases of amputation in the neighborhood of the ankle as a protest against abandoning these operations in favor of amputation below the knee. The first case was a Chopart amputation of thirteen years; never any trouble wearing a shoe made by a common shoemaker. The second was a Chopart with apparatus, showing no deformity, and walking well with scarcely a perceptible limp. The third was a Pirogoff with apparatus, walking well. The fourth was a double amputation in a man weighing two hundred and twenty pounds. One leg was removed below the knee—seat of election—and the other a Pirogoff. The patient stated that the Pirogoff was much the more satisfactory.

It was held that in none of these cases would their condition have been improved by an amputation high up on the leg.

Third Day, Thursday, May 17th.

Address on Hygiene.—Dr. J. H. Wilson, of Beaver, read the Annual Address on Hygiene. He spoke of the reduction in the amount of sickness, and attributed it to the increased number and improved efficiency of the boards of health. In speaking of the practice of free school supplies prevalent throughout the State, Dr. Wilson said: There is not a pretence to give the scholars the same books and pencils as the day before, and from the habit of children chewing lead pencils, diphtheria and other diseases may be transmitted. There should be some method of disinfecting the books. It would be much better for the child to be supplied by the parent than to take the risk under the present method. Some school boards need to be taught that foul air is heavier than pure air and cannot be gotten rid of by ventilators at the top of a room. Dr. Wilson went on to speak of the physician's duty in instructing those of the masses who come under his care in the simple laws of hygiene, such as removing all the day clothing when retiring for the night, and washing the entire body every day. Electricity, he said, is becoming recognized as a scientific agent. It has been experimented with in purifying atmospheric dust and in disinfecting sewage. In speaking of tuberculosis, Dr. Wilson said: The annual mortality by this disease in this country is 165,600, or an average of 450 a day. Dr. Fletcher's labors in this city have attracted much attention. He has proven that certain residences in this city, in the Fifth Ward, are infected by this disease. In the discussions which followed, Dr. William P. Munn, of Denver, said: We have in Denver a house to-house inspection, conducted by a trained sanitary inspector. The inspection consists not only of the house and its immediate surroundings, as the pavements and the alleys and sewers, but also the habits of its inmates. The results of these inspections are classified and indexed in a manner similar to cards used in libraries. Anyone contemplating buying a house can go to the Health Board and have this information spread out before him, and see the condition of the house. Many people are in this way saved by the records of the Health Department from buying infected houses. "And, in many instances, negligent landlords, knowing that their properties will not be rented while they are down in the health records as bad, have them put in a healthful condition."

Prophylaxis in the Treatment of Tuberculosis.—Dr. Lawrence F. Flick, of Philadelphia, in his paper with this title, asserted that a most valuable lesson taught by the organic theory of tuberculosis is prophylaxis in the treatment of the disease. Tuberculosis is strictly a parasitic disease. In nature's effort to get rid of the parasite, reinfection is liable to take place.

Were it not for reinfection, all cases of tuberculosis would get well. The disease is really a series of invasions of the organism producing it.

The prevention of auto-inoculation gives the key to the treatment of this disease. In so far as this can be accomplished, treatment is successful, and no farther.

Auto-inoculation can be controlled in two ways: by building up the system of the patient so as to enable it to resist new deposits, and by preventing the readmission of the organisms into the system.

Strychnine in Pulmonary Consumption.—Dr. Thomas J. Mays, of Philadelphia, in his paper with this title, claims that, next to rest and food, strychnine in large doses is the most important agent in the treatment of pulmonary consumption. Begin with $\frac{1}{30}$ of a grain, and gradually increase to $\frac{1}{15}$, $\frac{1}{10}$, or $\frac{1}{8}$ of a grain, or even give it in larger doses, four times a day. According to the author it does not produce albuminuria or diabetes, as is generally supposed. It alleviates the loss of appetite, the vomiting, the constipation, the nervousness, and sleeplessness, the pain in the chest, the cough and expectoration, the dyspnœa, the weakness of the heart, and acts as a blood-builder in an eminent degree. Its usefulness rests on its influence over the nervous system, and is another link, the speaker said, in the chain of evidence, which shows that, in the great majority of cases, pulmonary consumption is the direct result of primary disease of the pulmonary nerve-supply.

Tubercular Meningitis.—Dr. Daniel Longaker, of Philadelphia, in a short paper emphasized the frequency of tuberculosis of the mediastinal glands; the occasional dissemination of acute tuberculosis from such foci, sometimes general, but usually more limited—in the case in question, to the cerebral meninges and the spleen. It may be latent, but frequently causes long-continued cough, and such cough, if associated with even slight impairment of the general health, should be looked on with suspicion. In adults the general health may be perfect. It must be regarded as a menace to the life of the individual, although under favorable conditions it produces no harm in the majority of cases. A mass of authiakosis in the cheesy gland, near the bacilli, seemed to prove inhalation as the origin of the disease.

Colorado Climate for Consumptives.—Dr. Wm. P. Munn, of Colorado, said that tuberculosis of the lungs is curable. He spoke of climatic environment as the greatest factor in the battle of the human organism against micro organism. He said that the climatic advantages of Colorado are: 1. Its low absolute and relative humidity. 2. Rarity of atmosphere dependent upon altitude. 3. Sunshine. 4. Cool and equable temperature.

The great majority of cases of consumption if sent to Colorado, will recover, if only sent early. Hemorrhagic types of the disease are especially benefited. Residence in Colorado should be permanent, if possible, but in no case less than five years.

Early recognition of pulmonary consumption is essential to its successful climatic treatment. The healthy children of tubercular parents now coming to adult life in Colorado are a strong argument against the heredity of consumption. Favorable climatic environment protects them from the direct contagion of their parents due to residence in the same home.

A Bureau of Public Health.—A resolution was offered and adopted that the society expresses its approval of the establishment of a bureau of public health, and its opinion that the welfare of our country would be greatly benefited thereby, and requests that the representatives of

our State aid the passage of the bill in Congress by their earnest efforts. A copy of the resolution was ordered to be sent to each Senator and member of the House of Representatives at Washington.

Address on Ophthalmology.—Dr. George E. de Schweinitz, of Philadelphia, divided the art of restoring health to disordered eyes into optical, surgical, and medical therapeutics. After a brief review of the most important advances in the first two departments of this division, he addressed the Society on the medicinal and non-surgical ocular therapeutics. He reviewed subconjunctival injections of corrosive sublimate, commending them in selected cases, and described his experimental work and that of Dr. Chasseaud in connection with intraocular injections of antiseptic substances, concluding that this form of medication, although presenting attractive features, had not yet reached a safe status in ophthalmic practice.

Abuses of mercury in the treatment of diseases of the eye were referred to, and, in the management of optic nerve atrophy, suspension, injections after the manner of Brown Séquard, and the effects of various drugs, particularly antipyrin, strychnia, and nitro-glycerine were described.

The relation of electricity to diseases of the eye received attention, especially the method of treating optic nerve atrophy by means of voltaic alternatives, and the use of the continuous current in the management of vitreous disease and chronic irido-choroiditis.

The medicinal treatment of the congested choroid coats, as the result of eye-strain, was insisted upon as an essential aid in the management of asthenopia. Following this, modern investigations in regard to the untoward effects of cocaine were discussed, the new mydriatic, scopolamine, was compared with atropine, and the address closed with a reference to the proper method of procuring conjunctival antisepsis, as nearly as this is possible, and the danger of powerful germicides in relation to the cornea.

Dr. de Schweinitz closed with a strong appeal to each physician to use his personal influence to assist in securing legislative regulations for the prevention of blindness from ophthalmus neonatorum.

Treatment of the Corneal Ulcer by General Practitioner.—Dr. S. Lewis Ziegler asserted that corneal ulcer is not necessarily dangerous, but may seriously impair vision, especially when central. Lachrymo-nasal lesions are the immediate cause, gastro-intestinal disorders from errors in diet are the remote cause; constitutional dyscrasiæ may have some influence as a predisposing cause. If septic materials are present in the ocular cul de sac, a break in the corneal epithelium will court infection and subsequent ulceration.

To summarize: Simple corneal ulcer is a purely local inflammatory process, arising chiefly from infection by septic secretions, and originating in lachrymo nasal lesions.

The treatment required is: 1. Apply a mild antiseptic, soothing lotion to the eye, a mydriatic if needed, and hot applications when indicated. 2. Treat the nose locally with compound tincture of benzoin and the use of a cleansing spray. 3. Regulate the diet, give salt-water baths, and improve the hygiene generally.

Uterine Fibroids.—Dr. Charles P. Noble, in a paper with this title, referred to the teaching concerning fibroids current ten years ago, viz.: 1. That the disease is a benign one, tending to a spontaneous cure at the menopause. 2. That it never causes death. 3. That hysterectomy is the most dangerous operation in surgery, having a mortality of forty per cent. He pointed out that ten years' study of the disease has demonstrated: 1. That it is a serious disease, almost invariably producing marked invalidism, and not infrequently causing death by hemorrhage, by undergoing malignant, cystic, or necrotic changes, by paving the way for intercurrent diseases, by proving an obstruction to labor, and by pressure upon the urinary organs and other abdominal viscera. 2. That the menopause is delayed from five to ten years. 3. That spontaneous cure not infrequently does not follow the menopause, and that many fibroids grow more rapidly after than before that period. 4. That hysterectomy, except in complicated cases, has been a comparatively safe operation. He quoted the recent experience of Kelly, Baer, Polk, and himself in hysterectomy—including all classes of cases as they come, one hundred and sixty-eight cases, nine deaths, or a mortality of five and three-tenths per cent.

The deaths were in the broken-down complicated cases. The failure of ergot and electricity and the comparative failure of oöphorectomy to cure was referred to. The principle of early operation, now accepted for ovarian tumors, was urged in the treatment of fibroid, so that the mortality can be still further reduced.

A Cause of Failure in the Surgical Treatment of Internal Strabismus.—Dr. Thomas F. Hansell, in his paper with this title, said that Donders' theory of the causation of internal squint in hypermetropia is incomplete, in that he taught that the excessive action of the accommodation in overcoming hypermetropia induced corresponding excessive convergence only; whereas its influence is not thus limited to the interni, but extends to all the muscles under the control of the third nerve. Dr. Hansell believes that the simple, pure, internal strabismus of hypermetropia, as described by Donders, cannot exist, but must always be complicated by an upward strabismus, for the following reason: The stimulus of the overacting ciliary muscle is communicated not only to the nucleus of the internus, but to that of the superior rectus, of the inferior rectus, of the inferior oblique, and of the pupil.

The nucleus of the levator palpebræ is probably also involved; but since the function of this muscle is to elevate the lid, and not to rotate the cornea, its action is not relative to the subject of this paper. Hence their combined action is:

1. Contraction of the pupil.

2. Esotropia, because the external rectus, the antagonist of the internal, receives no motor impulse.

3. Hypertropia, because the two elevators of the cornea, the superior rectus, and the inferior oblique, overcome by their contraction the single depressor, the inferior rectus, which is the only one of the depressors belonging to the third nerve group, the superior oblique having an independent nerve supply.

Therefore,

1. The squinting eye is invariably rotated inward and upward.

2. In alternating squint, fixation is transferred from one eye to the other at the patient's will, and the non-fixing eye immediately turns inward and upward. Fixation with R. means left hyperesotropia. Fixation with L. means right hyperesotropia.

3. In constant squint, fixation is always made with the same eye; hence there is no transference of either esotropia, or hypertropia, and the eye not used in fixation is rotated inward and upward.

4. In concomitant squint, binocular vision is established by correction of the refraction and tenotomy of both internal muscles.

5. In constant squint, in addition, vertical equilibrium must be restored by tenotomy of the superior rectus of the squinting and possibly of the inferior rectus of the fixing eye.

The President-elect, John B. Roberts, of Philadelphia, was introduced by Dr. McCormick. He took the chair, and announced the appointments for the annual addresses of next year as follows: Address on Medicine, Dr. I. C. Gable, of York County; Address on Obstetrics, Dr. W. B. Ulrich, of Delaware County; Address on Surgery, Dr. C. L. Stevens, of Bradford County; Address on Hygiene, Dr. Hildegarde H. Longsdorf, of Cumberland County; Address on Mental Diseases, Dr. F. X. Dercum, of Philadelphia County; Address on Otology, Dr. L. H. Taylor, of Luzerne County.

Correspondence.

A QUESTION OF FACT AND ACCURACY IN STATISTICS.

DR. SPENCE TAKES ISSUE WITH DR. BECK.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: My letter in your issue of June 2d, which seems to have aroused Dr. Carl Beck to an unusual degree, as evidenced by his reply in your issue of June 16th, was not intended as a discussion of the doctor's paper on pyothorax. It was written simply to correct the false conclusion which he drew from my article in *The St. Louis Clinique*.

I am sorry, after aiming to make my remarks very easy of comprehension, he should, besides misinterpreting so many of its statements, consider the letter as an attack upon himself. These are hardly of sufficient consequence that I should take up your space to convince Dr. Beck of his errors; but I must, in justice to those concerned, reiterate those statements of mine which the doctor has directly contradicted.

I was present at the meeting of the County Medical Society the evening Dr. Beck read his paper, and I state again, "the general opinion was, that free incision with good drainage was all that was necessary in the majority of cases." Dr. Beck evidently forgot that four men discussed his paper, and only one (one of the surgeons he mentioned) was mildly in favor of resection. It seems to me, therefore, the general opinion was as I have stated.

Dr. Beck refers to a patient on whom he says he "unhappily had the bad fortune to be compelled to perform resection" after Dr. Ripley had made an incision. It will be my good fortune, while assuring him of my sympathy, to give the doctor here the true history of that case. I am surprised to find that it differs so materially from the one published by Dr. Beck, for this appears to be Case IX. of his paper.

The child, a girl of six years of age at the time of the operation, not ten as published, was taken sick in March, 1893, with pleuro pneumonia. Dr. Ripley, in private practice, saw the child in consultation with the family physician, and diagnosed an empyema.

On April 4, 1893, Dr. Ripley made a free incision into the chest, and after liberating a large quantity of pus, introduced a good sized drainage tube, dressed the wound, and gave the necessary instructions. He only saw the child once more, and that was four days after the operation. On April 14th, ten days after the incision, the family for some reason became displeased with their family physician and dismissed him. That of course ended Dr. Ripley's observation of the case. Another physician was now called, who on the advice of another consultant, sent the child to St. Luke's Hospital, under the supposition that the other pleural cavity also contained pus. Tnis proved to be incorrect, for so the St. Luke's people decided after a careful examination including the insertion of an exploring needle. They found no pus in the chest into which they introduced the needle. Therefore, as the child was never in St. Francis Hospital or in any other except St. Luke's, contrary to Dr. Beck's report she was not "aspirated for empyema in a hospital of this city."

The last attending physician was recalled after the child had been sent home from St. Luke's Hospital, and by means of a chain saw he exsected a small piece of rib, and introduced a drainage-tube of very small calibre. This exsection was done about three weeks after the incision, and some time later a piece of this small tube broke off into the chest. It is ridiculous to say, as Dr. Beck does in his history of this case, this tube, "after it had courageously resisted the permanent rush of the retained pus, at last resigned and broke beneath the safety-pin," when you reflect that this pus cavity had been opened twice and was constantly draining during the previous three weeks.

Now on May 15, 1893, less than six weeks after Dr. Ripley's incision, instead of six months as he reports in his pathetic history, Dr. Beck exsected a piece of rib three eighths of an inch long. The parents showed me these curios, the piece of bone last exsected and the several drain-tubes, which they keep for safety in a little plush lined jewelry box.

Dr. Beck's report of this case now reads as follows: "Four weeks later recovery was perfect, after the poor child had been aspirated, incised, and resected, first with saw and then with shears." This reads well, but what are the facts?

The mother tells me the child was confined to bed during May, June, July, August, and into September, the next four months after Dr. Beck's operation, and the wound was not healed until Christmas, 1893. Thus, instead of recovery being perfect in four weeks, as Dr. Beck has the presumption to tell us, the child was four full months in bed, and recovery was not complete till seven months after Dr. Beck's resection.

These facts need no comments; but they show how valueless this case is as to the relative merits of incision and resection. It was a resection, following an exsection.

I have gone rather minutely into this history, in the hope that Dr. Beck will copy it into his case-book, so that he may have it at hand, should information be again requested of him. I really trust he has been more accurate in the histories he has published of the other cases.

Dr. Beck says in his letter, "The value of the fourteen histories which were appended to my reasons why resection is the better treatment, consists in their unusual and interesting additional circumstances." It must be admitted they are both unusual and interesting, especially Case IX. It is very unusual, even after, according to Dr. Beck, the irrational operation simple incision, to have fistulæ remain as long as in the case twenty-six years of age, mentioned in his paper, and in Cases III., V., and VI. Certainly Cases V. and VI. cannot be cited as very encouraging examples of the "only rational method of treating empyema." Surely the doctor does not give to resection the credit for the recovery of Cases XII. and XIII.; for he says he did not operate on them at all, the first case having expectorated the pus, and in the other it was absorbed.

Statistics, in order to be valuable, should be as to their material facts, correct.

ARNOT SPENCE, M.D.

70 WEST SEVENTY-FIRST STREET, June 29, 1894.

A LARGE DOSE OF CYANIDE OF POTASSIUM.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the issue of the MEDICAL RECORD for June 9, 1894, I notice a criticism upon my report of a case in which a large dose of cyanide of potassium was swallowed without a fatal result.

I have just written to my patient of two years ago and enclose his answer. Since it is so naïve and corresponds closely enough to his first statement to me, with which I took care not to acquaint him, I hope you will print it entire, simply suppressing the signature.

In my opinion this letter of my patient is characterized by about as much "precision and exactness of detail" as we are liable to get in suicidal attempts.

If my critic has any cases in which large amounts of cyanide were weighed and recorded before being taken, I hope he will publish them. As a rule, however, this means of satisfying our laudable scientific curiosity is not taken by the suicide.

On the part of the doctor in this case, there has been no "guessing" at all, as I have simply reported the statements of the patient.

I am very sorry that my critic is dissatisfied with the definiteness of my report, but I have simply furnished

what I had to give, hoping that it might be of value to someone of my fellow-laborers.

Yours respectfully,
F. W. HIGGINS, M.D.

"SYRACUSE, N. Y., June 13, 1894.

"DR. HIGGINS—

DEAR SIR: Yours of June 11 at hand and in reply I went to a drug store and could not find just such a shaped piece of cyanide potassine as I took, but had to break it off of a large chunk, and it was rough and ragged and weighed nine grains. Now I think the piece I took was heavier, as it was about the same size but was a solid piece and perfectly smooth on all sides. I do not think it was possible for any of it to have remained in the glass, as it was a hard chunk, and I swallowed it immediately after drawing about one ounce of whiskey on it. Now, if you will draw up such papers as you want and send same to me I will go before notary public and swear to and save them. The date was October 7, 1892. Hoping the above will be satisfactory, I remain yours, and ready to do you a favor."

MUST THE PARSON PAY?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Periodically the question of "Must the Parson Pay?" is resurrected, and at this particular period it is viable again. This afternoon I have read an article from a Durham, N. C., doctor, and an answer from "A Minister," both of which are clear of the true inwardness of the question. Both speak of the amount of money received by each, respectively and relatively, and upon that base their respective sides of the argument. This is not the question at all. And there is one which, while very much lower than the highest, will appeal to the reason of even the Durham M.D. Indeed, he challenges the argument when he says that, when he had determined that those well-fed and well paid North Carolina preachers were no longer "objects of charity," and consequently not entitled to the doctor's largess, with a magnificent burst of generosity he increased his subscription to the minister's salary "from $39 to $50 per year." He "had been a member of the church for years," and, of course, was under obligation, according to his own showing, to pay for what he got in preaching. How well does he do it. Fifty dollars per year. Fifty-two Sundays in each of those years—two sermons each Sunday and one Wednesday evening at prayer-meeting, give an aggregate of one hundred and fifty six hours of his preacher's time devoted to the doctor's welfare every year, for which the doctor pays the munificent sum of thirty cents (in round numbers) for each hour's work. If the doctor hasn't a wife, he ought to have, so to the two the price is reduced to a little over fifteen cents for each; and when he says he has practised medicine at Durham for twenty years, it is at least presumable that the doctor has averaged during that time three children to hear each sermon. So that three cents is the figure at which his spiritual medicine comes to him per hour per head. And this takes no thought of the many kindly offices done by the good pastor to the parishioners with never a thought of compensation. Now, it seems pertinent to ask the doctor if, when he sends in the parson's bill, he will in the spirit of "the one for the other," which he so insists upon, fairly estimate his prescriptions at the same royal fees which he pays the parson. To a man up a very dwarfish tree, it looks, if he look with good eyes and fairly, that the parson is the one who "wears the yoke," and not the doctor, and if the parson should "rebel," preaching would come quite a good deal higher to the most of us than it does at present. "Objects of charity," indeed! If there is a man on earth who earns every dollar of his salary, it is the preacher of the gospel. True, the doctor earns his—true, the doctor does a great deal of his work for people who cannot pay; but it is also true that many members of the Durham church can't pay anything for their preaching, and others won't, so that this is only as broad as it is long. The doctor has appealed to the *quid pro quo* argument, and should be held to it. The fee for office prescriptions in smaller towns is usually $1. If the Durham doctors will, in local society assembled, proceed an other step in their reformation, and at next report be able to show that they each have raised their church subscription to $156 per year for each member of each family, then they will have earned the right to vaporize upon this question some more, and the preachers will make no objection to paying their medical bills like other folks.

For shame, my brethren! Blush to remember that you ever thought to say such things before, and don't ever do so again. I intimated that there was a higher and better reason than I have indicated for holding up the hands of these men, but I am no preacher, and the MEDICAL RECORD is no publisher of sermons. I am a practitioner of medicine, however, and I don't belittle my profession when I claim that we could do less well without the offices of the faithful, conscientious pastor than he without us. My pastor—God bless him—ministers faithfully to my living and has lovingly and tenderly buried my dead, and when opportunity offers I shall serve him, glad to be able to in some measure show my love and gratitude. Charity, indeed; God save the mark!

J. C. BOGLE, M.D.

DANVILLE, KY., June 11, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 30, 1894.

	Cases.	Deaths.
Tuberculosis	99	48
Typhoid fever	7	6
Scarlet fever	63	10
Cerebro-spinal meningitis	4	4
Measles	86	10
Diphtheria	232	61
Small-pox	9	4
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

New Laws of Interest to the Medical Profession.—The last Legislature was no exception to the average run of legislatures as to attempts made to break down the safeguards of the medical profession. One bill cut the fee for admission to the regents' examination from $25 down to $5; another made the State pay the fee instead of the student; and a third, in the interest of the Faith Curists, provided that any person may freely contract for the services of whomsoever he considers competent to alleviate suffering, or prevent or heal disease, and it shall be lawful for persons so employed to attend, treat, nurse, and endeavor to heal the employing patient and receive compensation therefor, subject to the medical laws of the State relative to improper practice. None of these bills were passed.

A law was passed providing that any person holding a diploma of date prior to January 1, 1880, conferring the degree of bachelor or doctor of medicine from a reputable incorporated American medical school or college, and who has been a resident and citizen of this State continuously since June 1, 1880, and who omitted or neglected to register with a county clerk as prescribed by law, shall, upon production of his or her diploma and satisfactory proof of such facts, as provided in section two hereof, be entitled, upon payment of a fee of $25, to receive from a State board of medical examiners recommendations upon

which the regents shall issue, under seal, a certificate of the facts that he or she may register in the clerk's office of the county where he or she may reside, which shall, after such registration, be a sufficient license to practise medicine in the county where registered. Proof of such residence shall be by affidavits of at least two reputable citizens, whose reliability shall be certified to by any county or supreme court judge of the State. Any person desirous of securing the benefits of this act must do so within one year from the date it takes effect; but it shall not be construed to conflict with chapter 661 of the laws of 1893, the Public Health Law.

The Governor vetoed an amendment to the Public Health Law providing that any person who, not being then lawfully authorized to practise medicine within this State and so registered according to law, shall practise medicine within this State without lawful registration, or in violation of any provision of this article, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than $50 for the first offence, and for each subsequent offence by a fine of not less than $100, or by imprisonment for not less than 100 days, or by both fine and imprisonment. When any prosecution under this article is made on the complaint of any incorporated medical society of the State, or any county medical society of such county entitled to representation in a State society, the fine when collected shall be paid to the society making the complaint, and the expense incurred by any such society in such prosecution, including necessary counsel fees, may be retained by such society out of the penalties so collected, and the residue, if any, shall be paid into the county treasury. In vetoing this bill, the Governor said: "The Public Health Law was constructed upon the principle of excluding from its provisions all but civil penalties, and transferring all criminal penalties to the penal code, where they properly belong. It was with this idea that the Statutory Revision Commissioners, in revising the health laws, omitted from the Public Health Law enacted last year the penal provisions which this bill contains, with the intention of inserting them in the penal code. As it happened, the Legislature passed no bill making that transfer, and accordingly the same provisions are now sought to be re enacted. The mistake has been made, however, of not attaching them to the penal code. To enact the bill in its present shape would be to destroy partially the wise principle upon which the Public Health Law was framed and to establish a bad precedent for future legislation."

A law was passed providing that any medical society now organized in any of the counties of the State set apart since the passage of the act of 1813 to incorporate medical societies for the purpose of regulating the practice of physic and surgery in this State, shall, upon complying with the provisions of this act, enjoy the same privileges and possess the same powers as the societies incorporated by virtue of said act now enjoy and possess, but subject, nevertheless, to the provision of any acts or parts of acts heretofore passed in relation to medical societies or to regulate the practice of physic and surgery in this State. Before any such society shall be entitled to the privileges and possess the powers as provided in this act, such society, at a regular meeting thereof or at a special meeting called for that purpose, after due notice to all its members, shall make and file with the Secretary of State a certificate signed and acknowledged by its president and secretary, stating the name of such society, the date of its organization, the name and residence of its members; that the said society, by a majority vote of its members, has elected to become and be a body corporate under and by virtue of said act, and be subject to the provisions of any acts or parts of acts heretofore passed, and now in force, in relation to such societies or the practice of physic and surgery in this State. Upon filing the certificate such society shall become and be a body corporate under the name set forth in said certificate, the same as if such society had been incorporated under and pursuant to the provisions of the said law.

The trustees of Columbia College were made the legal successors of the trustees of the College of Physicians and Surgeons for the executing of all trusts in the city of New York, and the consolidation was legalized. The same city was authorized to expend $200,000 for additional buildings for the Gouverneur Hospital. The Governor vetoed a bill changing the name and increasing the powers of the trustees of the West Side German Dispensary. The city is to pay 38 cents a day for each infant cared for in the babies' ward of the Post Graduate Hospital, and $15 for each mother in the Mothers and Babies' Hospital. The Hahnemann Hospital, the St. Mark's Hospital, and the Manhattan Hospital Association were released from certain assessments. A charter was granted to the Rochester Homœopathic Hospital. The law of 1889, relative to the formation of hospital corporations, was amended so that certificates must be passed upon by the courts. The Governor vetoed and afterward signed a bill for the relief of the Goshen Sanitarium Company, of Goshen. He vetoed a bill forbidding autopsies in insane asylums or hospitals unless the authorities of the county from which the deceased came had been previously notified. An appropriation was made for a homœopathic insane hospital on the Collins farm in Erie County. A bill failed to pass providing that in all hospitals or asylums homœopathic physicians shall be appointed equally with physicians of the regular school.

None of the amendments to the pharmacy laws were successful. One of these provided for a yearly license fee of $1. Another allowed an applicant to secure an order for a license from the court if not entitled to the same within three months after the organization of the board. The Governor vetoed amendments to Sections 184 and 187 of the Public Health Law so as to enable persons who have failed to apply for their licenses as pharmacists within the time prescribed to make application hereafter, and also to correct a clerical error in the existing section by changing the word "resignation" to "registration." The only amendment made to Section 187 was to correct the spelling of the word "peppermint," and another clerical error was made in the bill by changing the word "usual" to "unusual," so as to permit the sale of unusual domestic remedies by retail druggists in the rural districts without license as pharmacists and to prohibit the sale by them of usual remedies. The Governor stated in his veto that the new clerical error was worse than the old one.

A bill paying $3,000 a year to the physician to the coroner of Kings County for autopsies was vetoed. Bills did not pass: Providing that $15 shall be paid for autopsies ordered by coroners; giving a salary of $3,000 to each of the two coroners in Erie County; providing for the appointment of a State dental instructor; amending the Public Health Law so that a diploma may be given to anyone who had been practising dentistry for six years previous to June 20, 1879; amending the same law so as to make examinations for veterinary practice more stringent, and providing fines for violation of the same; extending to January 1, 1895, the time for registry of veterinarians who have no diploma from a college or society; and exempting veterinarians from jury duty. A State veterinary college was established at Cornell University, and $50,000 was appropriated for the same.

An amendment to the charter of the New York Society for the Relief of Widows and Orphans of Medical Men was passed, stating that the objects of said society are benevolent, and to afford relief to the widows, orphans, and dependent relatives of medical men. An amendment to the code of civil procedure requires an examination by a female physician or surgeon in cases where a female must be examined physically. The pay of police-force surgeons in New York City was increased from $2,250 to $3,000 a year, and the act was made to apply to Brooklyn also. A fine of $100 was ordered for every omission in reporting deaths, births, and marriages in New York City. A bill failed to reach the Governor providing that it shall be the duty of the State Board of

Health to make an analysis of all patent medicines and charge a fee of $50, and providing that patent medicines shall not be sold unless examined and approved by the State Board. The Governor vetoed a bill prohibiting the giving away or selling after October 1st, next, of any poison or poisonous substances in liquid form except in fluted bottles labelled in the manner heretofore provided by law. In his veto the Governor said: "The questions at once suggest themselves what is meant by 'poison or poisonous substances,' why the act should be limited to poisons in liquid form, and what is meant by 'fluted' bottles. A measure of this kind might be of service, but it should be more carefully worded so that it would not require a decision of the courts immediately to determine what it meant. A fluted bottle may be any one of a dozen or more different styles. Poisons and poisonous substances are very indefinite words."

Syphilis as a Ground for Divorce.—The Supreme Court of Vermont considers, in the recently decided case of Ryder *vs.* Ryder, syphilis as a ground for divorce. There is in that State, as in many of the other States, a law which provides that the marriage contract may be annulled when at the time of the marriage either party was physically incapable of entering into the marriage state. It was found in this case that the wife, from whom the husband asked to be divorced, had, at the time of marriage, chronic syphilis, which was incurable; that at the time the man who married her supposed her to be chaste; that in about two months she communicated the disease to him; that he did not know that she had the disease until she communicated it to him; that he voluntarily cohabited with her before and after he knew of her disease; that a child was born to them about a year and four months after their marriage; that the child was a mass of syphilitic sores, attributable to the condition of the mother, and soon died; that, at the birth of the child and afterward, the mother was in about the condition of the child from such sores; that they both consulted a physician, who treated them some time, when she got better; that he believed from that time, until the child was born, she had got well of the disease, and would not be troubled again with it; that he never had intercourse with her after the birth of the child; and that at no time could he have sexual intercourse with her without great danger of contracting the disease. Upon these facts, the question presented to the Supreme Court was whether the trial court was in error in refusing to annul the marriage A majority of the court thought it was. It was not found that the woman was fully aware of her condition at the time of the marriage. It would be presumed that she was not. If it were found that she was fully aware of her condition, she would have been guilty of a fraudulent concealment in not disclosing it to him she was about to marry. It would be an essential fact, entirely within her knowledge, not within his, nor open to his observation nor to his inquiry upon any reasonable principles which do or should prevail in conducting the negotiations which lead up to entering into the contract of marriage.—*Cincinnati Lancet and Clinic.*

The Last Illness of Dr. Brown Séquard.—Dr. Ogle gives in *The Lancet* an interesting account of the illness of the late Dr. Brown-Séquard. It appears, he says, that for some years past Dr. Brown-Séquard had not seemed to his friends to be in good general health. He had, in 1889, been the subject of severe muscular rheumatism, and in the autumn of that year he suffered from some prostatic trouble. From these ailments he entirely recovered. During the following winter and spring, when at Nice, he had an attack of whooping-cough, as was mentioned in *The Lancet* at the time. He was then regularly using his orchitic fluid injections. During the next two years he remained fairly well, working very hard and writing much, sometimes answering as many as eighty letters in the day. In the summer of 1893 he suffered great distress of mind owing to the ill-health of his wife, and in December he was residing at Nice and was confined to his bed, suffering from phlebitis, when his wife was dying. The consequent grief perfectly unmanned him, and was quite uncontrollable, and for some time he took but little food and was unable to sleep, refusing to leave the house. He returned to Paris at the beginning of March. Then came the vertigo and affection of sight, followed by the unconsciousness which he himself wrote about to Dr. Waterhouse, and from which he recovered. Dr. Dupuy says that at that period the speech remained "thick" and embarrassed at times, and that Dr. Brown-Séquard remarked: "This is an attack of epilepsy, as you can see." Instead of going to bed as desired, he wrote several letters, and, no doubt, wrote the letter to Dr. Waterhouse above alluded to, relating his symptoms and speculating upon them. During the following day he was in the same condition as regards vertigo, hemiopia, and occasional thickness of speech, but there was no aphasia. He was then visited also by his friends, Dr. Dejévine and Professor Potain, together with Dr. Dupuy, but could not be persuaded to take adequate rest and nourishment. On the next day (Friday) he consented to take meat, milk, and bread in small quantities throughout the day, and was comparatively cheerful. At the close of the day his face became much flushed, and the vertigo and hemiopia very distressing, and in consequence of this he walked from one room to another on "all fours," giving at the time the analysis of his symptoms and the prognosis of his case, as if he was contemplating and discoursing on the illness of another person. During the night of that day he was seized with vomiting, and in the early morning it was found that he was unable to speak and that the left arm was paralyzed as to power of movement. Dr. Dupuy found later on that paralysis of the muscles on the right side of the face existed and that the tongue was protruded to the right side. The left leg and the arm and leg on the right side were unaffected. There was no muscular spasm in any part, no interference with sensation, either general or special; but vertigo was much increased, and there was external strabismus of the right eye. The condition of speech was the same, and there was still no aphasia. Toward the evening of the day the face became exceedingly congested on several occasions, and the blood vessels of the forehead much swollen, and there was drooping of the upper eyelid of the right eye. During the morning of the next day (Saturday) he made Dr. Dupuy understand that he wished to write on a slate, but the result was unintelligible, excepting that the word "hyperæsthesia" was recognized. He then saw some friends with pleasure. At 2 A M on Sunday he became entirely unconscious, and coma set in. The axillary temperature rose to 40° C —*i.e.*, 104° F., and he died without a struggle near midnight. After the cessation of breathing and of the heart's action all the muscles of the legs and arms were for several minutes in a state of fibrillary contraction, and the axillary temperature at the point of death rose to 41.5° C.—*i.e.*, 105 9° F. No post-mortem examination could be made.

Prevention of Iodism —Dr. H. N. Spencer (*Int. Med. Mag.*, December, 1893), recommends the following mode, due to Professor Hardaway, of prescribing iodide of potassium; the tendency to coryza is counteracted by the nux vomica and ammonio citrate, while the tonics prevent depression:

℞ Iodide of potassium ..... ℥ ss.
Citrate of iron,
Ammonium ..... āā ʒ j.
Tincture of nux vomica ..... ♏ ij.
Water ..... ℥ jss.
Compound tincture of cinchona to make up ℥ iv.

Dose, one teaspoonful in half a glass of water after meals. The quantity of iodide may be increased to any desired extent by adding the necessary amount of a saturated solution.

Insanity is Increasing in Ireland, according to a recent parliamentary report.

The Fee for Medical Witnesses in the London police courts is half a guinea, or about $2.50.

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Original Articles.

TEN YEARS' EXPERIENCE WITH ALEXANDER'S OPERATION FOR SHORTENING THE ROUND LIGAMENTS OF THE UTERUS.

SIXTY-FIVE OPERATIONS.

BY PAUL F. MUNDÉ, M.D.,

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SOON after the publication of Alexander's little book on the operation revived, and, I believe, first actually performed by him, I, on December 12, 1884, undertook it successfully, following closely the directions laid down in Alexander's work. I was so much impressed with the ease of performance and the immediate and subsequent results of the operation that, during the next two years, I had six cases to report, in four of which I succeeded in finding the ligaments, in drawing them out, and attaching them as recommended by Alexander. My experience with the operation increased so rapidly that in the *American Journal of Obstetrics* for October, 1888, I was able to report twenty-three cases, with but three failures to find the ligaments, and with practically no failure in the other twenty cases as regards the permanency of the result of retaining the replaced uterus in the normal position. In that article I reviewed at some length the indications, results, and technique of the operation, and concluded by raising my voice very forcibly in its favor as against the later, more dangerous, less logical, and permanently less successful operations of shortening of the round ligaments through the opened abdominal cavity, or ventral fixation of the fundus uteri.

That article was not read before any medical society, but was simply printed in the above named journal, where, of course, it was seen by very many members of the profession, but perhaps did not attract as much attention as if it had been more widely circulated through the columns of the weekly medical press, or through the "Transactions" of the medical society before which it might have been read. Hence I am afraid that its precepts and deductions were not so generally appreciated as they should have been. Of course, I can speak only for myself and my own experience, and cannot expect that my professional brethren will unhesitatingly accept and follow my conclusions. But as I am known to be a conservative operator, not only in cœliotomy for diseased ovaries and tubes, but also as regards other operations which may possibly be avoided, I felt that I was entitled, with all due modesty, to more confidence and belief than if the operative furor had had exclusive possession of me. Nevertheless, I am constantly meeting gentlemen who, with quite as much experience as my own in all sorts of gynecological operations, still express a want of reliance in Alexander's operation and a preference for abdominal section with intra-abdominal shortening of the round ligaments, or ventral fixation, for the very same objects for which I unhesitatingly prefer Alexander's operation. It seems very difficult to convince some men that pelvic diseases in the female can be treated otherwise than by opening the abdominal cavity, and that, after all, in very many cases, this should be the last resort, when all other possible means have been exhausted.

Some of these gentlemen base their objections to Alexander's operation on the difficulty of finding the ligaments or the impossibility of drawing them out; others, again, contend that the results of the operation are not permanent; and others, again, claim that cœliotomy is a so much easier and equally safe way of attaining the same object. It is scarcely necessary for me to say that I am perfectly familiar, from a theoretical and practical experience in gynecology of over twenty five years, with the various methods which are preferred to Alexander's operation by the gentlemen to whom I refer. I do not prefer Alexander's operation because I have a particular hobby in its direction, or because I have anything other to gain by my preference than supporting what I think to be best. I can simply point to an experience which has now amounted to sixty-five operations, and which, with the increased knowledge of years, still leaves me a more and more confirmed supporter of the operation.

For minute details as regards the technique and the indications, I will refer my readers to the article published in the October, 1888, number of the *Journal of Obstetrics*. I will add but a few brief remarks as to what is stated there. First, as regards the technique of the operation I will repeat that if the ligaments are not found it is always the fault of the operator. It is simply a question of careful attention to the anatomical landmarks, namely, the spine of the pubis and the external inguinal ring, upon which depends the finding of the ligaments. If the tissues are quickly divided down to the fascia covering the external inguinal ring, this is lightly pricked with the scalpel, the knuckle of fat which pops out through the opening is carefully dissected out bluntly with the handle of the scalpel, always being careful to avoid detaching the bundle of fat from the spine of the pubis; if then this bundle of fat is entirely lifted up from the subjacent bone with mouse tooth forceps or an aneurism needle, a slow, minute, and blunt separation of the tissues thus lifted up will always succeed in revealing the initial fibres of the round ligament, which usually lie at the lower surface of the bundle thus lifted up, and run slightly outward and downward, not entirely outward. If traction upon the supposed fibres of the ligament shows that it runs toward the anterior superior spinous process of the ilium, the operator may be sure that he has picked up fibres of the external pillar of the ring or of the oblique fascia. Careful isolation of these fibres, gentle traction upon them if they prove to run in the right direction, and dull separation of the strand if it appears attached in the canal, will usually in a few minutes enable the operator to draw out the ligament so that its identity is at once apparent both to him and the spectators. This point having been reached, it is merely a question of gentle, continued traction to draw out as much of the ligament as is allowable, that is to say, until its increasing size, usually almost to that of a lead pencil, shows that its attachment to the uterus is approaching. If traction is too severe and too rapid, or if the ligament is either thin or much adherent, it may easily be broken, particularly in its lower two-thirds, and may then be lost to future research, or, if found again, will have to be picked up within the depth of the canal. I confess that I still have the impression, which I had years ago, that this operation requires all the wit and dexterity of the operator in order that by some oversight or carelessness

the ligament may not be lost, broken off, or pushed aside and thus lost.

The one unvarying landmark is always the spine of the pubis, where I have repeatedly succeeded in picking up the ligament, which at first I had failed to isolate in the bunch of fat lifted up according to direction. By non-attention to this landmark the operator may get to one side and manage to pick up some other cord, even drawing it out to a small extent, as in one case operated on by one of my house surgeons, until I, coming to the rescue, satisfied myself and him that it was the femoral artery, which of course was very hastily dropped, fortunately with no evil results. By returning to the spine of the pubis and proceeding thence forward, I in a moment, picked up the terminal fibres of the round ligament, isolated them, and drew out the ligament.

There will always be in this operation one drawback, and that is the possibility that the thinness of the ligaments, their very diffuse attachment to the spine of the pubis, and their uncertain appearance in the suprapubic fat, further, the adhesion of such a thin ligament in the Nuckian canal, may result in failure, either through the inability of the operator to isolate them or in their breaking during his attempt to draw them out. In my last case the ligament on the left side appeared to be unusually friable, for it broke close to its uterine origin, the only instance where I have seen it torn so high up. By passing the first suture very deeply I managed, however, to keep the left horn of the uterus close to the anterior abdominal wall and the result was perfect. This accident, the breaking of the ligaments, is, in my experience, the only drawback which this operation possesses. And I think by extreme care in traction it also can often be avoided.

I always stitch as much of the ligament as is not drawn entirely out of the external inguinal ring into the canal by passing a number of silkworm-gut sutures through each pillar of the ring and the ligament between, cutting off the supra abundant portion of the ligament. I have very seldom found it necessary to split up the inguinal canal to the internal ring to find the ligament, and then only when the ligament had been torn off during my first attempts at traction. I can see no use in opening the whole inguinal canal at first to perform the operation. It strikes me like a confession of timidity at the very outset to see this done. I am sure that out of the sixty five cases which I have performed I have not been obliged to open the whole inguinal canal in more than half a dozen cases. The usual length of my incision is not more than two inches.

Suppuration has occasionally resulted, particularly if much tearing and manipulation was required to find and draw out the ligaments. I formerly employed a split bone drainage-tube, but have for some years entirely discarded it, and cannot say that my cases have done any worse. Even if suppuration did take place in the wounds, the adhesion of the internal end of the ligament seemed to be quite firm enough to keep the uterus in position.

None of my patients have ever shown the least dangerous symptoms in consequence of the operation, although several times convalescence was prolonged to four and six weeks in consequence of suppuration. Never have I seen an inguinal hernia follow the operation. On the other hand, I have cured an inguinal hernia by the operation. I have always introduced a pessary into the vagina immediately after the operation, in order to prevent undue strain upon the newly attached ligaments, and have had it worn for from three to six months. Of course if perineorrhaphy was done at the same sitting a pessary could not be used.

As regards the length of time required to perform Alexander's operation, I would say that much depends upon the character of the case. In an easy case without adhesions I have frequently succeeded in completely drawing out both ligaments in from five to ten minutes for each side. The stitching, of course, must be carefully done, and the whole duration of the operation will probably not be less than thirty minutes. I need scarcely say that it is always imperative to draw out both ligaments, since to shorten only one ligament would result in placing the uterus in an oblique position.

Second. As regards the indications for the operation I would say that I consider the lines very closely drawn. Only a sharply retroverted or retroflexed uterus, with more or less descensus, with more or less relaxed vaginal walls, with perfect mobility of the uterus and adnexa, justifies Alexander's operation. I say justifies, but I do not necessarily mean that these conditions are an absolute indication for the operation, since in many such cases perfect relief may be given the woman by a properly adjusted pessary. It is only when a pessary cannot be fitted or comfortably worn, which will retain the uterus and ovaries in their normal position, or when the patient insists upon being cured instead of being merely temporarily relieved by a pessary, that we can say that Alexander's operation is indicated.

Whenever the uterus or appendages are adherent, Alexander's operation is absolutely and positively contra-indicated. We can, therefore, not compare the indications for Alexander's operation and those for ventral fixation, in my opinion, since the latter is justified and indicated only when adherence of the appendages or of the uterus warrant our opening the abdominal cavity and detaching the adhesions. Then, of course, it is scarcely worth while to do an Alexander's, since it adds very little to the danger to sew the uterus to the anterior abdominal wall. In such cases of adherent uterus and appendages, however, where they have been detached through an abdominal incision, the operation of shortening the round ligaments by doubling them upon themselves, as recommended by Wylie, A. P. Dudley, Mann, and others, should be considered. I have but one experience with this operation, which is still too recent to enable me to offer a positive opinion on the subject. Technically it is exceedingly pretty, logical, and easily effected. In prolapsus uteri I am not in favor of Alexander's operation, except in so far as it is one in a series of operative measures by which a retention of the uterus in its normal position in the pelvis is to be attained. Alone, Alexander's operation is, in my opinion, of no permanent benefit for prolapsus uteri. Neither do I consider it applicable to cases of anteversion and anteflexion in which it is thought advisable to lift up or straighten out the fundus uteri by drawing it up. In prolapsus uteri my experience is that the round ligaments are not able to withstand the constant downward strain upon them of the large body of the uterus. In anteversion and anteflexion the direction of elevation of the fundus produced by shortening the round ligaments would be such as to drag the fundus against the symphysis pubis and produce uncomfortable pressure on the bladder.

Third. In a very large proportion of cases where Alexander's operation is indicated, there exists, besides the retroversion and retroflexion and descensus of the uterus, a want of tone or an absence of the inferior uterine and vaginal supports, namely, the perineum is lacerated, the bladder and anterior vaginal wall and the rectum and posterior vaginal wall are prolapsed. While we can very easily lift up, and even retain in position, the backward displaced uterus and appendages by Alexander's operation, it stands to reason that a permanency of the result will be more assured by restoring to their normal conditions the inferior supports of the uterus and vagina; and often also a laceration of the cervix exists at the same time which maintains a chronic enlargement of the uterus. I therefore always combine with the Alexander's the restoration of these various organs, so far as possible, to their normal conditions. Thus if there is a laceration of the cervix, a retroflexion with descensus, a lacerated perineum, a cystocele, and a rectocele, I proceed in the following order: 1st, trachelorrhaphy; 2d, Alexander's; 3d, cystocele, Stoltz's operation (if still necessary after the uterus is replaced); 4th, rectocele with perineorrhaphy (Hegar's operation); or, if there be no rectocele

but simply a lacerated perineum, I restore the perineum by the flap-splitting method. I have frequently been able to perform this series of operations in less than an hour and a half, and I have yet to regret having done so, both as regards the immediate result on the patient (long duration of anæsthesia, loss of blood) and permanent results.

Fourth. After the technique and indications of the operation naturally comes the question as to its results, that is to say, does the uterus which has been successfully placed in its normal position by the shortening and attachment of the round ligaments to the inguinal canal remain in that position for the rest of the woman's life, in spite of the daily influences which tend to again displace it, and particularly in spite of the occurrence of pregnancy and parturition? This question would be an exceedingly easy one to answer if we were able to retain all, or even the majority, of our patients under observation. Manifestly this cannot be the case, since even in private practice comparatively few operative cases again present themselves, especially not if they are doing well. It is usually only those in whom the condition for which they were treated returns from whom we hear in an unpleasant sense, either personally or through friends. Comparatively few show their sense of gratitude by presenting themselves for the purpose of giving us the satisfaction of seeing how well we have succeeded; hence I can only refer to a certain number of my sixty-five cases of this operation in support of my statement that the operation has been a permanent success. Still the old saying, that "Straws show which way the wind blows," may possibly be applied to this operation. I can but say that of all those women upon whom I have operated during the last ten years for shortening the round ligaments, but two have come under my personal observation in whom the operation eventually proved a failure. In one of these the operation was performed for prolapsus uteri, the uterus being very large and heavy, a case in which I now consider the operation contra-indicated. In the second, the ligaments had been torn during their attempted extraction, and primarily the operation must be considered to have been at least a partial failure. I must add to these two cases three others in which, in my earlier days, I failed to find the ligaments; here the want of success must not be attributed to the operation, but to the operator. As regards the permanency of the success, I have had the opportunity to examine probably about one-half of my cases for a period varying from six months to as many years after the operation, and in none of them, I can honestly say, have I found the uterus to have deviated one iota from the position in which I put it. At the time of my last article, six years ago, I had not had the opportunity to see any of my cases undergo the crucial test of pregnancy and parturition; but since then not only have Drs. Coe and Boldt reported to me, if I remember right, each two cases, and Dr. Henry S. Stark one instance of that occurrence which had come under their observation, in which the uterus retained after confinement the normal anteverted position; but I myself have seen four such, in one of which I saw the patient in consultation for puerperal septicæmia in her fifth confinement, the other also for puerperal septicæmia in her first confinement, six years after the operation, and in all these cases the position of the uterus was absolutely normal. I do not suppose that it is necessary to say that the septicæmia in these cases had nothing to do with the Alexander's operation, but was merely accidental. Some of my operations performed during the last six months are of course too recent to enable me to draw conclusions as to their permanency. I would say that during the past eighteen months I performed twenty-one Alexander's operations, every one successfully.

In conclusion, while I do not undervalue the difficulties of the operation, and the uncertainties which will always be attached to it, I still must assert my unqualified belief in it, in properly selected cases, in preference to the other dangerous, and, as regards permanent results, no more certain, operations of ventral fixation and intra-peritoneal shortening of the ligaments.

A CASE OF CASTRATION FOR PRIMARY TUBERCULAR EPIDIDYMITIS IN A PATIENT AGED EIGHTY ONE.[1]

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It is with a certain misgiving that I offer to your attention the description of a single case, presenting neither an extraordinary rarity nor novelty of treatment.

The subject of genito urinary tuberculosis, especially of the testicle, presents many points of interest in the way of frequency, etiology, pathology, exact diagnosis, prognosis, and treatment. Every one of these points has been and is the subject of widely varying opinions. The literature is simply terrifying. A glance at the pages in the "Index Catalogue of the Surgeon-General's Library," on the article "Tubercular Testicle," led me to think it highly presumptuous on my part to try to add to this wealth of material. And yet it is most disappointing to find how often this material fails to enlighten us on any one particular point on which we seek information. Perhaps it is still more astonishing that a work bearing the promising title "The American Text Book of Surgery" should dismiss the consideration of tubercular testis in exactly nineteen lines.

The subject of this paper does not pretend to settle the many disputed points. I wish to emphasize some of the facts of this case as a possible support for the radical treatment of tubercular testicle, which I favor, although in a general way I am ready to fall into line with the present moderate plan of treatment of surgical tuberculosis in general, which has followed as a healthy reaction against the furor of attempted radical measures of the previous decade.

The following is a résumé of the case as furnished by the hospital records:

Henry W——, eighty-one years of age, born in Newfoundland, formerly a nurse, was admitted to St. Luke's Hospital, New York, August 13, 1891; service of Dr. F. H. Markoe, Attending Surgeon. To his great kindness I am indebted for the opportunity of treating and reporting the case.

Family history: Good.

Previous history: No rheumatic, malarial, cardiac, pulmonary, or renal history. No previous disorder of the genito urinary organs, save a single attack of gonorrhœa forty to fifty years ago. Double reducible inguinal hernia for fifty years.

Present history: Nine days previous to admission, while carrying a man down-stairs, he stumbled, sustaining a strain referred to left groin. In a day or two the left testicle became swollen and there was tenderness running up into the abdomen. (He thinks the organ has always been a little the larger.) The symptoms described increasing, he sought relief in hospital treatment.

Examination: The left half of the scrotum is occupied by a globular mass, diameter three inches, tense, elastic. At the upper and posterior portion the thickened and hardened epididymis can be made out. The cord is somewhat thickened, but smooth. Tumor translucent. Examination per rectum negative. No urethral discharge. Double reducible inguinal hernia. Pigmented scars on both legs.

On admission the temperature was 98° F.; pulse, 84; respiration, 20. Urine: Acid, clear, specific gravity 1.020, two per cent. albumin; no glucose. Microscopically a few red blood-cells and leucocytes.

Treatment: Regular diet, salts, suspensory bandage,

[1] Read at the meeting of the Harvard Medical Society of New York, January 27, 1894. The patient was also presented at this meeting.

and counter-irritation by Paquelin cautery. The next day it was noted that he was comfortable.

August 18th.—Pain continues. Ordered ung. hydrarg. locally daily.

August 26th —Condition unchanged, explored with hypodermic needle, clear fluid. Stop ung. hydrarg. Resume cautery.

August 28th.—Fluid about an ounce and a half entirely evacuated, giving considerable relief.

August 31st.—Swelling has returned, with further evidences of inflammation.

The diagnosis of a tubercular epididymitis had been established for some time. The increasing acuteness of the symptoms seemed to indicate operative interference, which was accepted by the patient. Accordingly, September 1st, the preparations for thoroughly cleansing the skin of the operative field were begun. Examination of the chest showed heart sounds distant and feeble. Lungs emphysematous, urine (previous to operation) acid, clear, sp. gr. 1.016, one per cent. albumin, many leucocysts and epithelium, hyaline casts.

September 4th.—I operated, having the kind assistance of Dr. Markoe. Previous to etherization atrop. sulph. gr. $\frac{1}{100}$, and whiskey 3 vj., were given. An incision one and one-half inch long, subsequently enlarged to two inches, from a point over body of pubes downward. Spermatic cord isolated, apparently normal. It was transfixed and tied high up with catgut ligatures, and divided. Constituents of cord isolated, and five fine catgut ligatures applied. Coverings of testicle separated and organ turned out, during which purulent contents escaped into the wound to a very slight extent. About one-third of scrotum ablated with testicle. Moderate hemorrhage. Union by mattrass and continuous suture of catgut. No drainage. Sterilized dressing over protective tissue.

Ether was very well borne; no nausea followed. There was considerable depression in the first few days. Stimulating food was diligently given, and he was gotten out of bed into a steamer chair in two days; this I think doing much to prevent him from getting into that hopeless state of apathy when old people are confined to bed. Five days after operation the dressing had to be inspected, as it got disturbed by moving him about daily. There was primary aseptic union. A second dressing for protection reapplied. He gradually regained his strength; for several days his mind was pretty feeble, but he was able to leave the hospital eleven days after the operation in pretty good shape.

The testicle removed was thus reported on by the pathologist, Dr. J. S. Thacher: "Microscopical examination shows typical tubercular changes. There are a large number of giant-cells, many tubercles, some tubercle tissue, and a little cheesy degeneration." There is no record of the microscopic changes. Six months ago, two years after the operation, I saw the patient again. He was waiting in my office for me one very hot day, feeling very comfortable indeed, while I was absolutely done up. Of the two he seemed by far the most vigorous. The scar was almost imperceptible, and save some disturbances of vision he was absolutely free from evidences of disease of any kind. His mental condition was as clear and vigorous as you could expect of a man aged eighty three.

This result of this case is exceedingly gratifying and has some points of interest. I think there are not a few surgeons, even to-day, who would have refused this elderly patient the radical operation of castration. Certainly the majority of practitioners, unfamiliar with the actual possibilities of thorough modern surgery, would not have suggested it to the patient. There is a good deal of superstitious horror still prevalent about the dangers of castration; sepsis, prolonged suppuration, secondary hemorrhage do not or should not exist, and these formerly made the operation hazardous. In this case we realized that the operation must be speedy and the convalescence smooth. The elaborate preparations of the skin prior to the operation sought to overcome one of the most frequent causes of wound suppuration, and rendered unnecessary any half-hearted and inefficient cleansing on the operating-table, which adds to the time. The operation was done quickly, and with scrupulous regard for the details of surgical cleanliness. The close approximation of the divided tissues made drainage unnecessary, obviating frequent change of dressings and pain and leaving no indolent sinus. The administration of atropine before the operation gave a certain protection against exhausting nausea after etherization. The immediate operative shock was not marked. I have already pointed out, in a paper in the *Annals of Surgery* for October, 1893, that the occurrence of shock in operations in advanced age is more theoretical than real.

The result in this case seems to point to the occurrence and radical cure of a primary tubercular epididymitis by castration. This statement at once brings us into a controversy as to the pathology and consequent indications. There is the older view that a tuberculosis of the genito-urinary system is only a part of the evidence of a general constitutional infection. This is true only to a certain extent.

Admitting, then, that there is a genito urinary tuberculosis while the remainder of the body is free, there are two views, the one, strongly upheld among others by Guyon, that a tuberculosis of the epididymis is never localized to it, but is accompanied by, or secondary to, some other tuberculosis of the genito-urinary system, notably the seminal vesicles. On the other hand there is the view, supported by one of the latest and best works, Jacobson's "Diseases of the Male Organs of Generation," that the epididymis is usually the first seat of the affection.

The figures indicating the relative frequency of phthisis in connection with tubercular testis are hard to estimate. In a series of 102 cases, of Terrillon and Reclus, of tubercular epididymitis, 57 cases also had phthisis. Reclus's thesis of 1876 found that only one case in three had phthisis; the same ratio is given by Wilson. Again, from the observations in the Pathological Institute at Prague we find that in 1,317 cases of phthisis the testicle was involved in the tubercular process only thirty-seven times.

Guyon denies the existence of a localized tubercular epididymitis. In 26 cases of autopsies of the genito-urinary tract the occurrence of foci confined to the epididymis was never observed. His observations of 222 cases of genito-urinary tuberculosis showed the following relations:

Forty cases of isolated genital tuberculosis; 74 cases of genito-urinary tuberculosis; 108 cases of combined genito-urinary tuberculosis. Now if it were true that tubercular epididymitis never occurs except as part of a diathesis or as part of a tuberculosis of the genital or genito-urinary system, the indications for castration would be pretty limited.

The evidence both of everyday clinical observation and the statistics quoted above, and, finally, the case under consideration, show that a genital tuberculosis may exist independent of phthisis. At once the indications for operation increase. Guyon's statistics are those of a specialist who sees the late case when a tubercular process has spread. Early radical treatment would much lessen the gloomy statistics of such specialists. For it is evident that removal of a diseased testicle, if complicated, we will say, with disease of the seminal vesicle, would only be a palliative operation with very narrow indications. The truth of the matter is, we do not accurately know just how the process develops. It seems apparent that in some cases it must develop primarily in the epididymis, the seminal vesicle being secondarily involved, and vice versa. My personal feeling is that the view which always makes the seminal vesicle the source of infection of the epididymis cannot be true; certainly not in the case under consideration (I take it for granted that the epididymis is attacked before the testicle, which, however, is almost invariably attacked with the progress of the disease). If it were possible to establish what

part of the epididymis is first attacked, some light might be obtained on the subject, although Mr. Jacobson says, "this is a point which has been much and needlessly discussed." In the majority of cases the first evidence of disease is found in the head of the epididymis where the spermatic artery breaks up and one branch enters the epididymis. The vessels of the epididymis are smaller and more tortuous than those of the testicle or vas deferens. This would point to infection from the blood-supply and show the priority of the process in the epididymis and not the seminal vesicle. The tendency of tubercular processes to become localized where the condition of blood-supply is most abundant and complex is well known, especially in the epiphyses, while on the other hand in tuberculosis of the tendon sheaths the poorly vascularized tendons remain unaffected although buried in tubercular tissue. I think on the whole we can accept this theory of infection by the blood supply to show that the process is primary to the epididymis and therefore admits of conditions favorable to operative relief. The question of infection from coitus, and consequently of the epididymis secondarily to infection of the seminal vesicle, has but little to support it, and is in the main fanciful. Mr. Jacobson says that if the theory were true, tubercular disease of the sexual organs should be more common than it is. That tubercular testis is at times congenital, that it follows upon injury as in our case, certainly are decided arguments against the coitus theory.

What guides have we in general for the treatment of tubercular testis? We have to consider the classes of cases and the classes of treatment available. I propose the following divisions:

1. Tuberculosis of the testicle (or epididymis or both), all other tubercular lesions being wanting. 2. Tuberculosis of the testicle and other portions of the genito-urinary tract. 3. Tuberculosis of the testicle and chronic pulmonary tuberculosis. 4. Tuberculosis of the testicle and other portions of the genito-urinary tract and chronic pulmonary tuberculosis. 5. Tuberculosis of the testicle forming part of a general acute miliary tuberculosis.

To combat these conditions we have at our disposal: 1. General constitutional treatment—hygienic, dietetic, climatic, and medicinal. 2. Palliative measures—evacuation of pus, curetting, caustics, thermo-cautery, resection, castration. 3. Radical measure—castration.

In all forms of the disease, save the rapidly fatal cases of acute miliary tuberculosis, the general constitutional treatment should be pushed to the fullest extent possible. It puts the patient into the best possible condition for repair of damage and checking of further invasion. To specify fully a judicious course of treatment would be to write a good-sized work. That constitutional treatment *per se* is curative, forever stamping out the disease, I do not admit—many early cases are apparently cured, many severe processes are temporarily ameliorated. A tubercular focus in any part of the body is likely to light up again at any time, although remaining dormant for years. The literature gives many such cases. The favorable absolute reports that have been quoted from time to time, to support the curative effects of constitutional treatment, either are issued too early or admit of doubt as to exact diagnosis.

I have said before, it is indicated in every one of the five phases just described. Are there any forms in which it becomes the only treatment? How far it will be employed in the fifth form is a matter of expediency. In the first form it will play a secondary part, the chief factor of success being early and radical removal of the primary focus.

In the next three forms it comes to the front, as here the operative measures can only be palliative; but in none of them is the possibility of improving the patient's condition by interference excluded, though the benefits grow less with the increasing complexity of the lesions.

We come now to the application of the palliative method. One of these methods, resection of diseased nodules in the epididymis, is quasi-radical, but presents no particular advantage, as it will scarcely maintain the function of the gland intact, and, being probably incomplete, is a waste of time when delay is dangerous.

The other varieties, incision of abscesses, use of sharp spoon, packing with iodoform gauze, cauterizing with chloride of zinc, burning with thermo-cautery, can never be indicated in Class 1, of localized primary tuberculosis of testis or epididymis. The remaining three forms may all be benefited but not cured by this means of treatment. (Strictly speaking, Class 3, localized tubercular epididymitis with phthisis, might be included with Class 1, although tubercular disease would not be banished from the body by an operation.) How far minor palliative measures, properly speaking, are to be preferred to castration, even as a palliative measure, will be discussed in the consideration of that operation.

We come now to the application of castration. In Class 1, where our diagnosis is absolutely trustworthy as to the limitations of the disease, and we can put the patient in a condition to withstand or avoid new formation of tubercular deposits, the result will be exceedingly gratifying. There are many cases of total cures persisting for many years which are on record to bear out that statement.

Great care must be taken, though, to assure ourselves that we are actually dealing with a localized process. If we grasp the spermatic cord above the tumor, and find that it is entirely free from enlargement and localized swelling and painless, we have not yet assured ourselves as to the condition. A most careful examination of the seminal vesicle per rectum is necessary; this requires considerable knowledge of the normal condition to detect the abnormal in early cases. The seminal vesicle may be recognized as diseased, while the cord appears or is normal. This peculiarity is explained by the usual limitation of the process at one or both of two points, the testicular end just above the tail of the epididymis, and at the distal end where it joins the seminal vesicle.

As to the application of castration in any of the three remaining forms, it seems to me, broadly speaking, to be indicated as a palliative measure in those two forms which I have made of the trouble in the genito-urinary tract. The indications are even more positive in the form of localized testicular trouble complicated by phthisis, provided the patient's general condition warrants doing an operation requiring general anæsthesia. In this case, if the patient can be brought under favorable circumstances, the process in the lungs may and can be arrested for a long time. In any of these conditions, as Mr. Jacobson very judiciously remarks, the patient is relieved from one of his two burdens—tuberculous lungs and suppurating, crippling, perhaps painful testis.

Guyon goes so far as to counsel invariably (within limits of reason, of course) the use of castration as a palliative measure, although he absolutely rejects its use in the early stages before the testicle is materially involved. Believing as he does that the process is conveyed from the seminal vesicle to the epididymis, he rejects the operation as curative, but indorses it most warmly as a palliative measure. After removal of the testis, where there is a genito urinary tuberculosis elsewhere, the relief from the acutely suppurating focus may give the system more vigor to combat the remaining process and possibly retard it.

The presence of a localized suppurating focus was long, and is yet, in some quarters, considered as a *noli me tangere*, for fear that interference with it may cause a general outburst of tubercular trouble. On this point Guyon expresses himself very positively as follows: "The most scrupulous surgeon may in all conscientious security attack a suppurating tubercular focus (provided that indications exist), without the slightest danger of injury to the general system."

That such an outbreak of general symptoms may occasionally arise as a result of localized operative interference, I am not prepared to deny. I have never seen it

occur after any operation for the relief of surgical tuberculosis.

Being relieved of a distressing local complication the patient is better able to go about, to live an outdoor life, to indulge in proper exercise, all of which are so necessary for improvement of the general health. Moreover, he is able to return promptly to work: of great importance to a poor man with a family. In one case I castrated a man for a pretty advanced process, and he resumed work as porter in a wholesale house in ten days.

As opposed to castration are dangers of an operation, apparent loss of virility, and consequently danger of hypochondriasis.

The surgeon must judge in each individual case how much advantage is to be obtained from an operation, how much any given patient can stand. As to the apparent loss of virility, the disappearance of both testicles may produce a marked effect on the mind. Perhaps here amputation of the worst, and mild palliative measures on the other might be indicated. Or, as has recently been most successfully done by Dr. R. F. Weir, a cylinder of celluloid resembling a testicle might be introduced into the scrotum and allowed to become embedded. Certainly, fear of mental changes ought not to deter us from removal of one testicle; it is more likely that a better effect is to be looked for by the removal of an unsightly and disagreeable condition which of itself would naturally be an obstacle to sexual relations.

The more carefully we weigh the results of castration, the little danger of the modern operation properly done, the wider seems to be the field for it. Of the further operation of removing diseased seminal vesicles, although some few brilliant results are beginning to be recorded, it is not within the province of this paper to discuss; the operation being still *sub judice*, and at present offering little in its favor. Of course, if it come to receive general recognition the indications for castration would be markedly increased.

The treatment of tubercular disease by injection of the substance known as Koch's tuberculin, which was recently hailed by the profession with such hysterical enthusiasm, has to day no standing, and need only to be mentioned to be condemned.

As to the sclerogenic method of treatment by injection of chloride of zinc, which is now on trial, I can say nothing in this connection as I am unaware of its employment in the form of disease under consideration.

Just as in malignant disease, early interference must give the best chance of effecting a cure. The responsibility of this rests chiefly on the recognition of the disease and the possibilities of treatment by the general practitioner.

It is to be hoped that our resources of exact diagnosis may be multiplied to allow of treatment of the disease by knowledge of its nature, without waiting to be compelled by urgent symptoms. The bacilli may be recognized sometimes in the fluid of the hydrocele, which occurs in about one-third of the cases. The centrifugal machine may be of use in facilitating the accumulation of solid particles. If there is pus, the bacilli will probably be found readily. Any of these fluids may be used to inoculate suitable culture media. Or the fluid may be used to inoculate animals susceptible to tuberculosis, *e.g.*, guinea-pigs. The semen is occasionally found to contain bacilli; other means failing it might yet afford a clew to the exact nature of the disease. And exactness is what we want to enable us to move early.

From consideration of some of the elements presented by the case reported, the following observations seem justified: That tubercular testis may occur as an idiopathic primary condition; that it may first appear in advanced age; that advanced age is no obstacle to successful interference.

I know that many interesting points have not been alluded to—the present paper has no pretension to exhaust the subject. Though I have made no extensive search on this line, I think that the great age of the patient and the result make the case unique.

THE TRANSMISSION OF THE CHOLERA SPIRILLUM BY THE ALIMENTARY CONTENTS AND INTESTINAL DEJECTA OF THE COMMON HOUSE-FLY.[1]

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While working with cholera in the Hoagland Laboratory of Bacteriology, it occurred to the writer to undertake a series of experiments to ascertain whether it were possible for the common house fly to carry the cholera spirillum and deposit it in a living state, and thus be one of the factors in the contagion; and also to ascertain whether cholera was fatal to flies within the time necessary for them to carry it to distant parts.

A fresh bouillon culture was made from the stock cultures in the laboratory, originally obtained from cases of cholera at Swinburne Island in 1892. Three large flies were caught and placed in a small wide mouthed bottle. A small piece of bread was then moistened with the beef-tea cholera culture, and put into the bottle along with the flies. They eagerly alighted on the bread and fed ravenously on it. A small amount of water was given them, and they were thus left for three days.

At the end of that time they were found to be alive and as active as ever. They were taken out and killed, and their intestinal contents squeezed out on to a clean cover-glass, care being taken not to let their feet come in contact with the cover-glass. Some of the expressed material from the intestine of each one was transferred to sterilized beef-tea, and placed in an incubator. Smear preparations were also made of the expressed intestinal contents, stained, and examined. In one slide were found a number of fine bacilli and spirilla. The spirilla resembled very closely in size and appearance those of cholera; yet one could not be sure until the separation and further testing and growth. At the end of two days the tubes in the incubator were examined and found to be cloudy, and to have a film very similar to the film seen on cholera cultures.

Mounted specimens were made from the film and under liquid, and the field found to be filled with bacilli of varying sizes, micrococci, and spirilla, the latter to all appearances identical with the cholera spirillum. Dilutions were made from the film, and under liquid; and then rolled in tubes. Acid was then added for the cholera red reaction, but with negative results.

At the end of two days the rolled tubes had grown numerous colonies. In two of the rolled tubes the cultures were very much mixed, while in one tube (the one made entirely from the film) the colonies were all uniform in appearance—small, round, grayish white, slightly refracting, liquefying colonies with crenated borders.

Several beef-tea inoculations were made from these latter colonies and placed in the incubator; stab cultures in gelatine were also made. Specimens mounted from these colonies showed long and short spirilla, also the comma shaped bacillus. The spirilla showed a remarkable form in arrangement. The microscopic field appeared to be filled with long, curved, intertwining, and intricately arranged hair like masses, having the appearance of a tuft of curled hair like that used in a mattress. This appearance and arrangement was only found in those specimens mounted from the colonies. It was perhaps the arrangement of spirilla just as they grew. A colony fitted into the wire loop; it was then touched lightly in half a dozen places to a cover-glass, and dried; no other disturbance being made. Invariably this same curled-hair arrangement of these exceedingly long spirilla was found.

At the end of two days the test-tube beef-tea inoculations were found to be cloudy and to have a film.

Examination of the hanging drop showed the field to be filled with comma shaped bacilli and a few spirilla—all in extremely active and lively motion.

The stab cultures in gelatin showed, at the end of two

[1] Read before the Brooklyn Pathological Society, June 14, 1894.

days, growth along the whole line of puncture, with commencing liquefaction at the top Specimens mounted from the beef tea culture showed characteristic comma bacilli and spirilla.

Sulphuric acid added to the beef tea culture gave an intense cholera red reaction.

Bacilli and spirilla of the same shape and size were found in all the beef tea inoculations.

Hydrochloric acid and nitric acid each gave the cholera red reaction; the reaction with hydrochloric acid being the most intense and lasting the longest without fading—at the end of ten days being almost as red as on the day it was made.

The stabs in gelatin continued to grow and liquefy the gelatin in the peculiar glass funnel shaped way at the top of the stab—while the lower part of the stab extended out into the gelatin as a thin, velvety, needle-like growth.

Specimens mounted from the gelatin culture showed the comma bacilli. Thus the recovery of the living spirillum of cholera from flies fed on a culture of cholera proves beyond any doubt how potent and important an agent the common house fly may be in the carrying of this spirillum.

From the fact of the flies not dying within three days, it goes to show that they are able to withstand the toxine of this culture, now two years old, certainly long enough to carry the infecting material great distances, and to deposit it in many places, each of them becoming a focus for infection.

Investigations relating to this subject were conducted by Simmonds, and are recorded in the *Deutsche medizinische Wochenschrift*, 1892, No. 41. Simmonds placed flies in a bottle with cholera fæces for a few minutes, and then allowed the flies to walk over gelatin plates. A series of about nine plates was arranged, and over each the flies were allowed to walk. In nearly all the plates the cholera spirillum was recovered. No attempt was made to isolate the spirillum and grow it in gelatin stab cultures and beef-tea, or to try for the cholera red reaction.

It might be argued that the cholera spirillum, which I recovered from the flies, was conveyed from their feet or their bodies on to the cover glass, the same as Simmonds recovered his spirillum, and thus never entered their intestinal canals. I was very careful that this accident should not occur. Before the flies were inoculated their wings were cut off; and before their intestinal contents were expressed their legs were pulled off and destroyed. The intestinal contents were forced out with sterilized forceps, and only the small drop of liquid at the end of the rectum was used for inoculating the beef tea.

It may be interesting here to note that I was unable to get the cholera red reaction in any of the mixed cultures in beef tea, but never failed to get it in the pure cultures of the spirillum recovered from the flies fed on the cholera.

During my work with this subject I was greatly aided by the many valuable suggestions of Dr. E. H. Wilson, the director of the laboratory, under whose directions all the manipulations were made. I intend to continue my investigations in this line further, and to ascertain whether other bacteria, such as the typhoid, anthrax, diphtheria, and tubercle bacilli, can possibly be carried and deposited in a living state by flies.

Alcohol and Sunstroke.—The late Surgeon Parke, medical officer of the Emin Pasha Relief Expedition, wrote shortly before his death a "Guide to Health in Africa." In speaking of sunstroke he says that he has met with comparatively few cases of it in his African service, and that "he has seen more cases of sunstroke occur during one 'field-day' at Aldershot than during seven years' medical experience in Africa." This immunity from thermal fever he attributes naturally to the use of precautionary measures, the most important of which is abstention from alcohol. "Drink," he says, "is certainly the most powerful predisposing cause of the development of the symptoms of sunstroke."

TWO HERNIOTOMIES IN A CHILD UNDER FIVE YEARS OF AGE—BASSINI'S METHOD.

By SAMUEL E. MILLIKEN, M.D.,

NEW YORK.

THE following case, Stanley H——, who first came to me from Newburgh, N. Y., on May 22, 1890, when a baby of seven months, illustrates some of the difficulties met with in the mechanical treatment of hernia, even at such an early age. Although exceptionally intelligent care was given the case at home, the hernia being retained for some months at a time, and with an otherwise healthy child, the rupture would protrude occasionally almost to its original size.

At the first visit there existed a left oblique congenital inguinal hernia, the size of a small egg, which was easily reducible, but was retained, only after some difficulty, with a "Hank" truss. A celluloid "Hood" truss was applied May 31st, as the worsted truss failed to hold the hernia. The mother was instructed not to remove the truss, even to give the child a bath. Sufficiently frequent visits were made to my office, as would enable me to readjust the truss, and see that the pressure over the inguinal canal and around the pelvis was uniform.

To show the weakened condition of the inguinal regions the child acquired a hernia on the right side, February 29, 1892, when a double truss was applied. This second hernia could not be accounted for by any other reason than the above, as the general health of the child was excellent. The congenital hernia did not improve, and it was decided to perform the radical operation; the right or acquired hernia, however, was easily controlled by a truss.

On June 20, 1893, the reconstruction of the inguinal canal was performed after Bassini's method. The hernia being congenital, the sac was cut off about one inch above the testis, and again flush with the internal ring. The conjoined tendon, and the shelving process of Poupart's ligament, were brought together with interrupted sutures of kangaroo tendon, posterior to the cord structures, while the aponeurosis of the external oblique was closed with a continuous suture of the same material, anterior to the cord structures, thus re-establishing the obliquity of the canal. The skin wound was sutured with interrupted catgut, without drainage. The wound healed under one dressing, without any complications, and the child was sent home on the tenth day after the operation, with instructions to be kept in the recumbent posture for ten days longer, so as to insure firm union of the deeper structures, only a light bandage being worn.

The hernia of the right side, which had been held for so long, was apparently cured, and the truss was therefore left off. However, in a few weeks after the child began to walk, the right hernia reappeared, and a truss was reapplied. With such an unsatisfactory result from conservative measures, I advised a radical operation for the right side, which was not performed until June 21, 1894, one year and one day after that on the left side, which had proven so successful, without any apparatus being worn afterward.

During the administration of the ether for the operation on the right side, the hernia protruded to the middle of the scrotum, and was the size of a large egg. The only difference in technique in this operation, from the one on the left side, was the total extirpation of the sac, as the hernia was acquired and not congenital. The first dressing was changed on the seventh day, when it was found that the catgut sutures in the skin were absorbed and complete union had taken place. The patient was sent home on the ninth day after the operation, with a light bandage, and the parents were instructed to keep the child in the recumbent posture until three weeks had elapsed after the operation.

Conclusions.—1. When any difficulty is met with in the mechanical treatment the radical operation should be performed even in young children.

2. If, after six months or a year, the truss has been steadily worn, and there still exists a flabby condition of the inguinal region, the operation is also indicated.

3. The risk of operating on children, where strict asepsis is observed, is little, if any, more than in adults.

4. The chances for a radical cure in children are greater than in adults, because of the more perfect reparative process at that age.

5. The reconstruction of the canal is, *par excellence*, the operation, and, as shown by Bassini's statistics, has stood the test of time.

6. To obtain the best results a great deal depends upon the surgical technique, and the suture material employed.

7. Drainage should not be employed, if the surgeon is careful to observe the modern rules of cleanliness; for if the wound is infected during the operation it must heal by granulation, and the drainage tube is always an additional source of danger.

8. After primary and complete union of the whole wound no truss is necessary.

36 West Fifty-ninth Street.

IS THERE A NORTHERN REMITTENT (NON-MALARIAL) FEVER?[1]

By NELSON RICHMOND, M.D.,

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The importance of the above subject and the interest manifested induce me to write a paper with the same title as that presented to this Society a year ago. In that paper, a year ago, the claim was made that there was a type of fever common to Western New York, and, as I have since learned, more or less common to the entire State, which, in my best judgment, was not typhoid, and to which there was no settled name accredited by all.

It was asserted that some physicians did call this type of fever a mild form of typhoid, others named it gastric, another bilious, another malarial, another remittent, and still another simple continued fever. It was believed that this heterogeneity of names was applied to one and the same fever, and that the lack of text-book information concerning it, coupled with the astigmatism of the observer, made confusion worse confounded. Various authors were quoted to show that either the names had no foundation in fact, or that the symptoms, as portrayed, were not applicable to the fever in question.

This paper will confine itself strictly to the discussion of the identity or non-identity of this type of fever with typhoid.

The burden of proof seems to be that it is not typhoid. But the writer is very anxious to be entirely satisfied in his own mind, either that he is right or that he is wrong. He is the more anxious, after having had nearly fifty such cases, all recurring, and which he never intimated were typhoid, to be clear in his own mind as to the future. These cases carried a period of thirteen years.

The fever in question is usually gradual in its onset, protracted and uneventful in its course, and as gradual in its subsidence. It is confined to neither sex. It has, in my experience, varied in age from five to sixty years. It has a duration from twenty-one to thirty-five days. It seems to run in cycles of seven. The temperature gradually increases in height, day by day, rarely going above 103° F., maintains the highest mark for a few days, and as gradually fades away. The tongue is usually covered with a yellowish-white coating. Sometimes the tongue is clean throughout the entire illness. The countenance is sometimes dull and stupid; again it is little changed. Constipation is usually present, or the bowel may be regular in its evacuations.

The patient is inclined to take things very easy, and not to worry about himself, his convalescence, or things in general.

The skin is usually dull in color or jaundiced in appearance. There is as much emaciation during the progress of the disease as in typhoid.

The pathology of the disease, as far as I am concerned, is a sealed book, for I have never lost a case. There is, moreover, seldom, if ever, any anxiety on the part of the attendant. It is a very comfortable sickness. Errors of diet, during the early stages of convalescence, cause a return of the fever for a few days.

Osler, under the heading "Mild and Abortive Forms of Typhoid Fever," says: "It is very important for the practitioner to recognize the mild type of typhoid fever, often spoken of as gastric fever or even regarded as simple febricula. In this form the symptoms are similar in kind, but altogether less intense than in the grave attacks, although the onset may be sudden and severe. The temperature rarely reaches 103° F., and the fever of onset may not show the gradual ascending evening record. The spleen is enlarged; the rose-spots may be marked; often they are very few in number. The diarrhœa is variable; sometimes it is not present. In such cases the symptoms may persist for from sixteen to twenty days."

I have given this very liberal quotation, not to strengthen my own argument, but to be perfectly fair to those who believe that the fever in question is typhoid. It would be very easy, after reading this description, to argue after this fashion: "What is the use of trying to prove that a disease is less to be feared than it actually is—that it has a much less dreaded name than some contend. Osler is good authority! His description fits nearly enough! Go on and call it typhoid! Your patient will get well and you will get the credit of having excellent success in treating typhoid fever. They will say you never have lost a case, perhaps."

But the above course of reasoning does not satisfy the honest, conscientious practitioner. I will admit, however, that one of the weakest points in the line of argument is the description of the fever. It is so monotonous. Crises and destructive symptoms are conspicuous by their absence.

Let us attempt to portray the symptoms which are absent in this disease, and which are so inseparably connected with the name typhoid.

You will please remark that I said nothing about rose-colored spots in this disease. If they ever have been present they have escaped my observation. There is never any right iliac tenderness. I have seen cases where there was tenderness in the left iliac region. There is seldom any diarrhœa—never any of the pea soup character.

There is never an anxious countenance, rather the reverse, as noted. There is never any sordes on the teeth, never any brown, dry, or cracked tongue—trembling on protrusion. In fact, gentlemen, what is typhoid, and what are typhoid symptoms as generally understood? What does the name convey to your minds but the above line of symptoms—one or all?

We are free to admit, however, that the name typhoid is unfortunate. Should "enteric fever" be generally adopted, and admission made that enteric fever meant an involvement of different portions of the alimentary canal; that Peyer's glands were involved in the serious cases—those accompanied by high temperature, brown, dry tongue, or delirium—then the agitation of this question might be considered unnecessary.

There is no doubt that the South furnishes a habitat for typhoid fever and malarial fever in all its subdivision types of remittent and intermittent varieties. There is no doubt that new sections of the North present the same forms of malarial fever. Malarial fevers were more or less common when this country was new. Cities and certain regions, well defined, present them more or less clearly at present. But the Lake Erie region of Western New York, where this fever has been studied, is a region entirely exempt from malarial influences. The first malarial disease is yet to be treated; the first malarial complication is yet to be observed in years of practice.

[1] Read before the State Medical Society, Albany, N. Y., February 6, 1894.

This, moreover, has been the testimony of physicians who have had a long practice here.

This region may have had malaria fifty or a hundred years ago. It may naturally be inferred that it did. If malaria prevailed and is now absent, may it not have left some disease in its wake? Some disease with its actual malarial germ eliminated? A disease subsequent to the former and depending upon it, but not similar?

If the South is to be credited with these different types of fever; if bilious, gastric, typho malarial, and malarial —without meaning malarial—simply naming it malarial for want of another name—are to be consigned to the Shades, what is the North going to do to offset the malarial types in the South? Is it to be argued that we live in the Garden of Eden? A place where they have only one type of fever and that (under your breath) is typhoid.

It does seem reasonable to me that, as the country is developed and civilization advances; as diseases, under better hygienic conditions and more wisdom in guidance, assume a less serious form, it is a natural inference that instead of losing the type of disease entirely, we should effect a modification of the disease. In this case it would be a change, the true malarial remittent with the germ of Laveran to a remittent of the present time without the presence of the germ. Delay in announcing a positive diagnosis in fevers until the tenth or twelfth day, is always a wise precaution, unless typhoid symptoms proclaim themselves so unmistakably as to admit of no question. A disinfection of the stools of all fever patients is a precaution simple and easy of observance, and restful to the conscience, when a case which admits of doubt develops symptoms unmistakably typhoid.

Desirous of getting many individual opinions upon this question, of being firmly settled in my own mind by a consensus of opinion of the gentlemen present that I am correct; or of being fully convinced, by a full and frank discussion, that the position I have taken is not a tenable one, I stand before you for judgment.

As stated before, I am firmly convinced that terms malarial as loosely applied—typho-malarial, gastric, bilious, and simple febricula—should be blotted from our text-books. The nomenclature should be simplified.

And yet the very fact that these names have crept into our text-books is one of the strongest proofs that there is a fever not typhoid, not malarial.

As suggested a year ago, I believe the name Northern Remittent Fever describes this fever in question, simplifies nomenclature, and is worthy of adoption.

Fredonia, N. Y.

VALUE OF THIRD BLOOD-CORPUSCLE[1] IN TUBERCULOSIS.

By ROBERT L. WATKINS, M.D.,

NEW YORK.

In a paper read before the Pan-American Medical Congress at Washington, in September, 1893, I stated that the third blood-corpuscle is a pathological product. The statement has given rise to criticism, both favorable and adverse. At that time, in my paper, I gave the proofs and reasons for my belief, and will not go over them again here. Arguments and statements deduced from another's experience are never as convincing as one's own, and this is a thing that any physician can test for himself if he has a good microscope.

The granular masses, or third blood-corpuscle, can readily be seen, either alone or in groups. When in groups they are often so pressed together that it may be confusing at first to detect their shape, but a little experience will soon overcome this difficulty, and you will be able to make valuable use of this means of diagnosis.

The third blood-corpuscle is the first indication of tuberculosis, and I assert that *tuberculosis in any form is impossible without its presence in the blood.* It makes its appearance long before the cough, or before any of the formerly recognized signs and symptoms appear. Not only is it found in pulmonary tuberculosis, but in Pott's disease, hip-joint disease, chronic abscesses, and lupus, which diseases are recognized by the best authorities as tubercular. It is also found in some cases of rheumatism and asthma, and often in people who appear perfectly well; but it is always the forerunner of tuberculosis. If it had been present in my own blood I should never have ventured to inoculate myself, as I did some time ago, with tubercle bacilli; and if it had appeared after the inoculation I should have had reason to feel worried. It did not appear, however, and the event has proved that I was justified in my confidence that tuberculosis would not develop.

In an article written recently by Dr. Charles Denison,[1] on "The Diagnosis of Tuberculosis by Tuberculin Injections," he says: "There is an active tubercular state—pre-tubercular state if you wish to call it so—before the tubercle makes its appearance as a factor in the case." (This statement has been made by many others, and, of course, has been known for a long time.) But, still further he says: "Reference is intended to those intricate, slowly acting blood-changes which come under the classification of dyscrasia, which may be, for all I know, the *sine qua non* of the bacillus of tuberculosis."

From my experience I believe the third blood corpuscle to be the *sine qua non* of the tubercle bacillus, and the former to be the means of diagnosticating this dyscrasia which it constitutes; and still further, I believe it to be one of the foods of the tubercle bacillus, and the only *seeable* one in the blood, for I have demonstrated that this germ will live in acute tubercular blood, and have published the same in previous articles. The following cases well illustrate the diagnostic value of this corpuscle.

A few days ago a young lady called upon me to have her lungs examined. She had been staying indoors a few days on account of a cold, but the night before something red came up in her throat like blood. As she had taken some wine that day it was thought it was possibly that, but she was frightened. I examined her chest, and so did another physician. Nothing was found except a little rough breathing. On examination of the blood it was found loaded with these corpuscles, and on that sign I settled my diagnosis of hemorrhage and tuberculosis. Two days after, when going up the Elevated stairs, she had a severe hemorrhage and has had several since. Temperature went up, and now, about two weeks after, she is in bed with high temperature and night sweats. In my experience these cases are not uncommon.

Mrs. H—— came to me with a supposed case of cancer on the forehead. It was a round ulcer about one and a half inch in diameter, one edge looking squamous like, it bleeding very easily, and most painfully sensitive. The neuralgia was quite extensive, radiating from it all over the head. There were also little nodules here and there over the forehead. This had been coming on one year, I believe. A microscopical examination of the blood showed the tubercular third blood-corpuscle present. I then made a diagnosis of tubercular ulcer or lupus, and not cancer. The sore is now healed fairly well, after two months' treatment.

Mr. H——, a single man, came to me only a few days ago, complaining of a cough with expectoration and pains in the chest, most of his family having died of tuberculosis. He only recently buried a sister, to whom he was very much attached, which fact worried him in regard to himself. A physical examination of his chest revealed evidence, in connection with the history, to say that it was the old story of beginning consumption. But on examining the blood no corpuscles were found; and he was put at ease at once, for it could not be tubercular.

Many other cases might be given, but I will only emphasize its value as a means of making a negative diagnosis, *i.e.*, to say that the absence of the third blood-corpuscle from the blood establishes the fact that no tuberculosis is present. The disease with which the patient is affected, therefore, must be of some other nature.

[1] As defined in Landois and Sterling, Physiology.

[1] New York Medical Journal, February 3, 1894.

Clinical Department.

THREE CASES OF NERVOUS DISEASES.

By PHILIP S. ROY, M.D.,
WASHINGTON, D. C.

Case I. *Raynaud's Disease.*—A colored boy, twelve years of age, complained now and then for three months of numbness of the right foot followed by burning pain, particularly marked in the big toe, with occasional attacks of neuralgia in that foot. About two weeks before I saw him he also complained of its feeling very cold—swelling commenced, and he suffered intense pain most of the time. Upon my first examination I found the big toe as black as ink—pressure upon it lessening the discoloration—and voluntary motion seemed lost. On my second visit nutritive alterations had occurred—blood-blisters had formed and several had broken, leaving raw surfaces. The nail was loose and the tissue underneath ulcerated. The asphyxia had continued, and to all appearances gangrene was about to occur.

I had ordered the foot to be elevated and wrapped in cotton-batting, and a soothing ointment applied to the toe. Internally I gave the elix. phosph., iron, quinia, and strychnia, with the twelfth of a grain of morphia to each teaspoonful. I did not see the case again, as the parents could not furnish either the drugs or the proper diet—and I advised that he be sent to the Children's Hospital, or else that one of the physicians to the poor be sent for. He had no fever when I first saw him, but three days afterward, on my second visit, his temperature was 103° F. I never compared the temperature of the two feet.

Case II. *Ménière's Disease.*—A white man, forty years of age, gave me the following history: About a year before I saw him, while at work, he was seized with violent vertigo and fell to the ground. Upon attempting to rise he found it impossible to do so. He was told that his face was very pale and covered with a cold perspiration; was taken home, and for two days, whenever he opened his eyes, all objects seemed to whirl around him. He vomited some the first day.

After two days he could walk about, but found he was very deaf in the right ear, with constant noises in that ear. Since the first attack he has had two others, and in the last of these I saw him; he was then unable to rise, and the slightest movement of his head caused the vertigo to return. His face was pale, with a cold perspiration, and the right ear very deaf. Between the attacks the deafness is much better, though hearing is never entirely restored. I examined the throat and external ear, and could find no disease to account for the vertigo. I therefore conclude that his is a case of true Ménière's disease. He had been told by his former physician that he had bilious attacks.

Case III. *Angio-neurotic Œdema.*—A woman, forty-five years of age, was suddenly attacked with œdematous swelling in one foot, accompanied with gastric pain and nausea. On the following day the other foot became swollen; this lasted three days, when the swelling left the feet and the hands became affected in the same manner. In two days the swelling disappeared from the hands and appeared in the face. At the end of a week all swelling had subsided. The woman looked delicate, but said her health was good. Upon examination I found no disease either of the heart or kidneys. She told me she had had slight attacks of a similar kind. I afterward saw her daughter with a similar attack, except that the swelling was confined to the face and hands and accompanied with nettle-rash, and the gastro-intestinal symptoms were more marked. The daughter's attack lasted ten days—first one part and then another of the face and hands becoming swollen. She had had several attacks in the three years previous. I could find nothing in the diet to account for the nettle-rash, nor did the remedies used for nettle-rash relieve her. In both cases I gave the elix. of iron, quinia, and strychnia, until they were well. I do not know that I have had sufficient opportunity, either from study or observation, to express an opinion upon the subject, but it seems to me that if this disease is sufficiently definite to justify giving it a separate description in medical literature, it is only because in so doing we emphasize the importance of considering the nervous system in sudden attacks of œdema.

The urticaria which sometimes accompanies the disease (as it did in one of my cases) would, as Osler says, make one believe that the patient had simply a case of urticaria—while, as in my other case, purpuric spots would cause one to fear some serious organic disease. These cases of nervous disease, the clinical histories of which differ so widely, are all due, according to our best light at this time, to vaso-motor influences. In the case of Raynaud's disease I exclude all other causes that might produce similar conditions. The more persistently we keep in mind the nervous system in making diagnosis, the oftener are obscure cases made clear to us.

SUMMER COMFORT FOR BABIES: WITH A HINT ON COLDS AND HAY FEVER.

By CHARLES E. PAGE, M.D.,
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"Man is not by nature a clothed animal," said Carlyle in "Sartor Resartus," and the writer has three little ones, aged respectively nine months, two and a half, and four years, who seem to agree with the Sage of Chelsea; they are never so happy as when they are naked. Four years ago (June 14, 1890) the eldest, a girl, was born, and during all the hot weather we kept her comfortable and happy "in her figure," literally. She was sufficiently blanketed at night and during the cool of the morning and evening, of course; but in spite of Mrs. Grundy she was kept naked much of the time, and with unfettered limbs she was creeping, or, at any rate, hitching, her way across the floor before she was four weeks old. Her unusual strength was due to our practice of non-tending, as well as to the freedom of body and limbs.

The more intelligent of our visitors, to whom she was exhibited, were delighted with the evidence of absolute comfort they beheld, and they straightway manifested a disposition to help their own little relatives as much as they could by stripping off some of the extra folds of flannel under which the little wretches were sweltering and half-smothering. But someone, we never learned who, informed the S. P. C. C. of the outrageous treatment of the little innocent, and looked for our arrest and summary punishment doubtless, and perhaps the adoption of the babe by the State; but it so happened that my little Nursery Guide, "How to Feed the Baby," published in 1882, was dedicated to the Society for the Prevention of Cruelty to Children, and so the President smiled benignly on the good soul who lodged the complaint, and assured her that if Dr. Page's baby died of frost-bite during the summer the case should be carefully investigated!

Something like ten to twelve thousand children have died, under the age of five years, in this city, since the occurrence of the little episode referred to, while our little girl continues to thrive, and to pull off her shoes and stockings the instant she enters the house from her outings, and both she and her little brother have time and again distressed the maid by cutting up that caper and going barefoot on "the Avenue" Numbers two and three have since come to us, and they share their elder sister's dislike for clothes. All three go barefoot in the house all the year around, and much of the time when out, and wear very slight rig at all times.

Next to a bad inheritance—many children being born too tough to kill, while some are so frail by nature that no kind of management will enable them to pull through—the principal causes of infant mortality are: (1) Excessive feeding, digestive capacity being lessened by lack of

exercise and overwrapping; (2) constant tending, and constant lack of natural exercise, so essential to vigor of body and digestive power; (3) excessive clothing, so depleting in many ways to the animal organism, the skin, a breathing as well as an excreting organ, being forced to get on with foul air, instead of fresh, while the pressure of clothing, all the worse if a belly-band is used, interferes seriously with the circulation of blood in the skin, etc.; (4) lack of fresh air in the home, very few homes being sufficiently ventilated.

"Why don't they catch their death o' cold?" Perhaps one reason is that, if the truth were known, none of us catches the disease in that way; it is rather a disease of accumulation of foul matters from the causes already named, and when the system becomes surcharged with filth and certain symptoms appear, we say—those of us who know no better—"He has caught cold!" The fact of the matter is that it is rather a lack of cold, and hence the prediction of Dr. Felix Oswald, that the time will come when every sanitarium will be supplied with an immense refrigerator for the treatment of "colds" (I can never bring myself to repeat the name except with quotation marks). The adult victims of flannels and a diet unsuited to the season, hundreds of whom (physicians as well as laymen, it must be confessed) flock to the White Mountains every summer to avoid "hay fever," might take a hint here and live in comfort in any part of the country. They might go to the mountains for fun, but not as a lot of sneezing, overgrown infants, to babble about the hoped-for specific. How often I have observed a babe who could not suck and breathe at the same time for "snuffles," completely relieved within a half-minute by removing a large share of its clothing, and having a cold, damp towel pressed over the forehead, temples, and top of the head, sending a cool wave in to relieve the congested parts. It should be a cool, damp towel, by the way, not ice-cold for an infant; but the grown snuffling may employ more vigorous measures.

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NOTES ON BRAIN SURGERY.

By W. E. PUTNAM, M.D.,

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Case I. *Depressed Fracture of Skull—Amputation at Shoulder joint—Recovery.*—Andy P——, a Pole, aged nineteen, tried to board a freight train and was thrown under the cars. I saw him two hours after the accident, no effort had been made to check the hemorrhage. The left arm was fractured in three places between the wrist and shoulder, and the skin and subcutaneous tissue were destroyed well forward on to the chest. The patient did not complain of pain, and I took it for granted that the railroad shock was to blame for this. After carrying him two miles to my office I amputated the shoulder-joint by a mixed method, using a peculiar-shaped posterior flap and sliding some skin over the pectoral muscles. Amputation completed, my patient continued to sleep on and on, and I began to look for "new worlds to conquer," when I found a three-inch half circular depressed fracture in the left parietal bone. No ether was needed, as the compression had caused what I supposed to be railroad shock. I used a carpenter's chisel (for trephine) and a monkey-wrench (for a mallet). After chiselling away enough of the bone, I used the same chisel to raise the depressed bone. By keeping a continuous stream of water playing on the seat of operation one can see perfectly just how to hold his chisel, there being then little or no danger of injuring the dura mater. The bone was raised, and a strip of iodoform gauze was used as drainage. One hour after the operation the patient sat up and drank a cup of coffee, after which he slid off the operating-table and walked half a dozen steps unaided. In three weeks he was out again looking for work.

Case II. *Compound Fracture of Skull, Opening into the Superior Longitudinal Sinus, with Loss of Two Ounces of Brain Matter—Recovery.*—Swede, aged twenty-three. Two laborers were wrestling for an iron hook, and the hook came down on top of the patient's head, the sharp point entering the superior longitudinal sinus. The patient was comatose when brought to my office. There was a swelling the size of a goose egg on top of the head. A free incision released the pressure on brain, and the patient's heart and respiration improved immediately. When he coughed he literally spat blood from the top of his head, throwing blood fully four feet against the wall of my office. He lost at least two ounces of brain matter. I had not seen very many cases of brain surgery out here in the country, so I packed the wound loosely with iodoform gauze and took my patient twenty miles to the Rush Medical College, in Chicago. Dr. N. Senn put a snap forceps on each of the divided ends of the superior longitudinal sinus, and held them in place with a plaster-of-Paris dressing enveloping the whole head. In four days the snap forceps were removed. In twelve weeks the patient left the hospital, partially paralyzed on one side, but able to walk by the aid of a cane. I wish to record these two simple cases for the benefit of young surgeons who, like myself, are located in country towns, where we are compelled to use our little knowledge and all our courage to save a human life.

AN EASY METHOD OF BATHING IN TYPHOID FEVER.

By WILLIAM B. NOYES, M.D.,

NEW YORK.

Every new medical text-book and periodical accumulates statistics testifying to the brilliant results following the use of cold baths in typhoid fever. The hospitals in which this method is chiefly carried on are almost, without exception, showing a higher percentage of recoveries than ever before under any other plan of treatment.

Why is it, then, that this method is not universally adopted and carried out in private practice? The answer is simple. Easy as it is in a hospital with an abundance of skilled assistance, there is no method of treatment in use so difficult to carry out properly as tubbing in typhoid fever in private families.

As the family bath-room is generally out of the question on account of its inconvenient location, and use by others of the household, it becomes necessary to buy a large portable bath-tub.

Even in cases where there are two trained nurses it is necessary to call in the clumsy assistance of some members of the family to help in the lifting of the patient to and from the tub, and this is a strain on them, and not unattended with risk to the one who is sick.

There is undoubtedly still a widespread opposition among the laity, both educated and uneducated, to the use of "cold baths" in fever. A young physician must have a very strong hold on the family, and enjoy their most complete confidence, to take the risk of the responsibility, if the disease takes a bad turn later from any accidental complications, and even older men will sometimes hesitate.

A physician of high standing and extensive practice in the city recently said to me, "I do not find that tubbing is practicable in private families, much as I would like to make use of it. I have to content myself with sponging and packs, and have had some success with constant use of an ice-coil over the abdomen as a substitute. If the ice-coil acts so well in lesions of the peritoneal coat of the intestines, why should it not have a similar result in lesions of the mucous coat?"

But all these three methods, sponging, wet pack, or ice coil, while they add to the comfort of the patient, do not cause very decided or long continued lowering of the temperature.

Again, one who has had bad results from necessary changing of the position of a patient in an advanced stage of typhoid to examine the back of the chest, or something equally simple, causing disagreeable heart symptoms, will rather dread the process of lifting a pa-

tient out of his bed for any reason whatever, especially if the patient is large and the bed a double one.

The following method, which I once saw used in a hospital in Buffalo, commends itself as a simple solution of the whole problem. I have never seen it published in any medical journal or work, and am sure that it has not often been tried.

It is a very easy thing to slip a rubber blanket under the patient, and raise the two sides and the ends at the foot and head of the bed, nine or ten inches, by a row of pillows, bolsters, sand-bags, or simple boards.

The rubber blanket ought to be of double thickness, as large as can be purchased, and special care must be given to the arranging of the corners. When this is done you have the patient at the bottom of an impromptu bath-tub, into which you can pour water at any desired temperature, and in sufficient quantity to partially or entirely cover his body.

Only two inches of water would be enough to give a cool sponge-bath ten times as efficacious as the gingerly sponging possible under ordinary circumstances, and if the sides and corners are firmly fixed you can easily make this tub hold all the water you desire. The water may be run from the nearest faucet by a rubber tube. I have found it a simpler and equally successful method to carry it in pails and pour it over the patient, starting with tepid and gradually cooling it down to the desired temperature.

The neatest method I have found by experiment is to use a large "watering-pot" with a sprinkler, such as is used for watering plants. This is a method which will not commend itself to those who dislike humble and commonplace methods to accomplish something that more complicated and more impressive methods might do.

I believe this kind of a bath will always be grateful to the patient, and if it is found necessary to use water at a decidedly low temperature, would give rise to less shock than a sudden plunge into a tub filled with very cold water. The effect on the temperature is the same as it would be under the other method with a stationary tub.

The water can be removed, without spilling a drop on the bed, by siphoning with a rubber tube, or dipping with a small pitcher or cup, or sponging. Then the blanket can be dried and left in place, covered by a clean sheet, or better yet, removed and dried in the sun.

All this needs a little care, for it would be a very serious and troublesome accident to soak the patient's bed-clothing and mattress, but the difficulty and risk to the patient cannot be compared with that attending the use of the ordinary tub. And best of all, in those cases where the family or friends must do the work, and the employment of trained nurses is impossible on account of expense, this method can always be successfully used when tubbing would be out of the question.

I have not found one single objection to the employment of the method in private cases, and cannot see why it could not be used in hospitals.

164 West Seventy-third Street.

HISTORY AND TREATMENT OF A CASE OF TRAUMATIC TETANUS AND SEQUELÆ.

By CHARLES J. MONTGOMERY, M.D.,

AUGUSTA, GA.

N——, colored, male, aged thirty-two; occupation, hostler and yard boy. Previous history: No sickness for nineteen years, with exception of one or two attacks of grippe (keeping at work, however, in spite of it), and generally in winter has more or less of bronchitis. History and treatment of case: With a razor he cut a corn with a certain amount of healthy tissue from fifth toe of left foot, causing some bleeding. Kept at work for several days, becoming by degrees very lame. By January 24, 1894, a few days after the injury, lameness and pain in the foot were so great that discontinuance of work was necessary and he went to bed. I was called to see him January 26th. At my direction, before I reached his house, a flax-seed poultice was applied to the foot and fifteen grains of quinine were given. On reaching the bedside I found him suffering considerable pain in the foot, which was somewhat swollen. Fever was present. A simple febrifuge mixture was prescribed containing a small amount of acetate of morphine, and directions were given for him to be sponged with cool water and his bowels moved with a blue pill followed by castor-oil.

January 27th.—He was found to have passed a restless night, and suffered pain not only in the foot, but at the base of the spine and in the left hip. Some pain about the jaws. In addition to the febrifuge mixture he was ordered to take chloral, ten grains, that night, and the same amount the next morning.

January 28th.—Morning of January 28th the jaws were set, but not too close to take liquid food and medicine. Physostigmine salicylate, gr. $\frac{1}{32}$, was given internally, repeated once an hour and again in three and four hours (this being the only preparation of calabar bean obtainable), and a hypodermic of morphine sulphate, gr. $\frac{1}{4}$, was given. Chloral was given again that night, and another hypodermic of morphine. Temperature at this time was $102\frac{3}{5}$° F.

On the morning of the 29th the patient seemed to feel slightly easier, with temperature 101° F. Fever mixture was ordered stopped, but physostigmine continued. Later in the morning he had a violent convulsion, and, having been sent for, I reached the bedside during a second convulsion. Having brought with me a mixture containing chloral, gr. 15; bromide of potassium, gr. 30, in each tablespoonful, I forced his teeth slightly apart with a spoon and gave him a dose of this medicine. I ordered that it be repeated every four hours, and that immediately after each dose he should take morphine, gr. $\frac{1}{4}$, internally. Physostigmine was discontinued. He began to improve immediately after the first dose of the above mixture, and never had another convulsion during the whole progress of the disease. That night he felt comparatively easy and his temperature was 102° F.

On the morning of the 30th the temperature was $101\frac{3}{5}$° F., the man having passed a comfortable night. That evening the temperature was $102\frac{3}{5}$° F., pulse about 110 and weak, and on the morning of the 31st, though a comfortable night had been passed, the temperature was found to be 103° F. I now began to administer infusion of digitalis, in teaspoonful doses, fifteen minutes after each dose of the chloral mixture. The temperature had fallen on the evening of the 31st to $101\frac{3}{5}$° F., and never again rose above that point, which I attribute largely to the continued use of infusion of digitalis. By February 2d the temperature had fallen to $99\frac{3}{5}$° F. in the morning, to rise only to $99\frac{4}{5}$° F. in the evening, with pulse 100. At this time the patient was free from pain and could open his jaws about one inch.

The treatment, in addition to that mentioned, consisted in local hot applications, both wet and dry, to the neck and spine, dressings containing laudanum to the foot, and later in the course of the disease, massage, with hot cocoa-butter, and to move the bowels a rectal injection was given every three days.

Diet consisted of a glass of milk every hour, with whiskey, and when he became able to chew, semi-solid and then solid food was taken.

On February 3d the dose of the chloral mixture was reduced, a dessert-spoonful (or gr. 7½ of chloral, 15 gr. of bromide) being taken at each dose instead of a tablespoonful, except the last dose at night, which was a tablespoonful. Soon the daily amount was still more diminished, though not entirely discontinued, till the end of the third week. About the end of the second week the patient was in a low state of delirium continually, and seemed to be growing weaker, and question of amputation was presented. I decided not to amputate, but dissected away a portion of the scar tissue at the site of the original wound, which had never been an open wound since I had been attending the case. The wound which I thus made, as well as a large portion of the foot, which was

still swollen, was dressed with iodoform gauze saturated with laudanum, and this dressing was continued about a week.

About the fourth week the patient showed evident signs of improvement, which, though slow, were continuous, till the 11th of March, when he complained of passing blood at the end of urination, which was accomplished with a great deal of tenesmus. This condition was followed by pain over the pubes. Suppositories of opium and belladonna afforded great relief, poultices but little; ergotole and fluid extract of cannabis indica were given by the stomach, flax-seed tea prescribed, and the diet reduced again to milk. Examination of the urine, which was very turbid, showed it to contain a large amount of albumin.

Pain in the back and over the kidneys developed later. Œdema of the feet and ankles with great tenderness was present. Dry cups were applied to the loins, and later hot-water cloths, and digitalis and acetate of potassium administered internally; also a few doses of pilocarpine. The temperature during these complications ranged between 99° and 101° F.

The temperature on March 19th had fallen to normal, with pulse at 82, fairly strong, and the urine, though cloudy and containing an abundant sediment, was found to be free from albumin. Improvement from this time has been practically continuous, and the patient now (April 7th), is able to walk about the house and a little out of doors every day, and is steadily gaining strength.

AN UNUSUAL CASE OF TOXIC AMBLYOPIA.

By F. E. D'ŒNCH, M.D.,

NEW YORK.

M. G——, aged forty, came to my office on account of the sudden failure of his sight, which had taken place eleven days previously. The evening before he had been reading fine type without difficulty, whereas the following morning he could not even see the large capitals in the name of his newspaper. As his sight had grown rather worse than better, he sought medical advice.

I found that, even with the aid of his glasses, he could not count fingers at a greater distance than four feet. Distinct sector-shaped atrophy of the temporal side of the optic nerve. Pupils somewhat contracted, but respond promptly to light. Visual field good. There is a marked central color-scotoma, especially for green and red.

The patient has smoked cigarettes since he was eleven years of age, generally about ten or twelve a day, and has also used alcoholic stimulants, though he has not indulged in them to excess. The diagnosis was therefore easy, and the treatment generally adopted in such cases begun. Tobacco and alcohol were entirely withdrawn, and strychnine in increasing doses was injected, at first every day, afterward every other day. Improvement in sight began almost immediately. In a week it was $\frac{8}{200}$, in two weeks $\frac{137}{200}$, in three weeks $\frac{156}{200}$, and so on, until after two months it was $\frac{18}{20}+$, which, in view of the fact that there is a myopia of $\frac{1}{4}$, with an additional astigmatism of $\frac{1}{20}$, may be regarded as normal sight. Faces seem slightly dark still, but he has no difficulty in reading even small print. There has been no change since that time.

Cases of toxic amblyopia are not uncommon, and if sight has not fallen to too low a level, the prognosis is usually favorable. Loss of vision is gradual, and the patient will therefore generally consult a physician before it is too late. The peculiar feature of this case lies in the rapidity with which vision failed, dropping within twelve hours from normal acuteness to counting fingers at a distance of a few feet. Such a rapid loss is seen in acute glaucoma and a few other diseases, but not in amblyopia due to tobacco and alcohol, and so this case seemed to me to be worthy of being put on record.

NOTES ON PELVIC AND GENERAL MASSAGE.

By SARAH E. POST, M.D.,

NEW YORK.

Pelvic Massage.—I have recently attempted this treatment in three cases, in all with a satisfactory result. I have found it possible to propel the contents of the tubes down through the uterus and to secure its discharge without the usual recurring cramps. By cramps, I mean tubal colic. In one case this returned every second or third day; in another it was constant. The pain is in the inguinal region and down the front of the thigh. It seems to be due to traction upon the peritoneal attachments in the inguinal region. It is, I think, not located in the tube itself, for this may be found upon a higher level. The pulling is, of course, to be referred to the contractions and movements of the tube. To secure discharge without contraction and to thus relieve pain became after this discovery the main object of the treatment. In a case of simple catarrh of one side the tube was about the size of the ureter. In another case both tubes were easily found. After treatment they were softer and might escape the touch. This last case had in addition numerous nodules the size of a bean or pea, extending from the side of the uterus, as I recall the case, into the iliac fossa. These nodules also disappeared in the course of six weeks' massage.

In working upon the tubes I move the index-finger of the right hand back and forth transversely across their lumen, beginning at the distal end, carrying the skin, possibly, the whole of the abominal wall, with the finger in this motion, gently persisting over each accumulation where convolution of the tube has occurred. The tips of the two first fingers were used upon the uterus, the kneading being generally restricted to the horns themselves. At the same time the index- and middle-finger of the left hand straightened the uterus and held it upright where there was displacement of the body or neck. In this manœuvre the index-finger was passed in front of the uterus and the middle-finger behind it. In a case without serious displacement no vaginal manipulation was required.

The cases treated had the tubes in place at the sides of the uterus. I would not expect to benefit prolapsed tubes, especially if adherent in Douglas's space.

Incidentally I was made to recognize an unexpected position of the organs. The body of the uterus was entirely above the symphysis, and the distal extremity of the tube pointed toward the anterior iliac spine. This position is, I think, to be traced to our present modes of dress. Many young women have discarded the corset, and all probably hang the skirt from a skeleton waist, giving freedom to the diaphragm, and, as a consequence, elevation of all the abdominal and pelvic organs. In my experience, however, this alteration is recent. Six years ago I found this high position and regarded it as a deformity.

General Massage—Effleurage.—Another matter noted since the publication of my book seems to me of considerable importance. In the course of a bath it has occurred to me to be given the usual long rub, the hands being carried from the distal end of the extremity upward, and from thence downward by a return stroke, equally firm pressure being used. When applied to the arms, I found the heart affected as follows: With the up-stroke came two slow, full beats; with the down-stroke, two feebler beats or two rapid beats followed by an intermission. I am not giving positive details, not at the time having access to a graphic apparatus. The sensation was, however, unpleasant, and, upon my request for up-rubbing only, I secured the results of increased heart pressure—a slowed, strengthened, comfortable pulse. The work upon the lower extremities did not so much affect the heart. Still the influence of the down-stroke was perceptible, and I had it omitted throughout. An element so influential ought, however, to have some useful application. Possibly this may be found in cases of cyanosis, pulsating jugulars, and an overloaded heart.

Progress of Medical Science.

Ovaritis.—Wintcenilz's treatment is the following: Rest in bed; vaginal injections of hot salt-water; scarification of the os uteri twice daily; rubbing of the abdomen with an ointment composed of ichthyol and lanoline in equal parts; and a teaspoonful at bedtime of this mixture for constipation:

℞. Sulphate of soda	ʒ iv.
Sulphur	ʒ j.
Sugar	ʒ v.
Ess. of peppermint	q. s.

In principle this is exactly Goodell's teaching of years ago. In his "Lessons in Gynæcology," p. 386, he says of Weir Mitchell's rest-cure for ovaritis: "I have seen wonderful cures from this treatment, and can recommend it with the utmost confidence. Bedridden patients have been restored to health, and chronic invalids returned to society." Med. Record

Gout of the Intestine.—Many cases of colic, enteralgia, enteritis, and typhlitis, are really gouty manifestations located in the intestine, according to Haig, who uses salicylate of soda with great success for such cases, in doses of about fifteen grains every three or four hours. Drugs like lead, mercury, zinc, and even cocaine, when given to gouty patients, form insoluble urates, and an intestinal crisis may be produced. Buckworth observes that persons do not die of gouty intestinal troubles, and therefore direct ocular pathological proof is wanting. At the same time he emphasizes the fact of their existence. From Haig and Buckworth's observations it may be inferred that in women who have gout or rheumatic gout the so-called recurrent peritonitis, occurring most frequently just after menstruation, is in reality gout of the intestine. There is slight fever or a subnormal temperature, intense pain that gradually diminishes, marked tenderness on pressure, great anxiety and fear of moving or being touched, complete loss of appetite, general prostration and mental depression following, the cycle completing itself in about two or four weeks. Remedies directed to the underlying constitutional state are the only ones that permanently relieve and cure. Med. Record

Tissue Metabolism in Chlorosis.—There is a translation in the *International Medical Magazine* for April, 1894, of a lecture delivered to a private class by Carl von Noorden on "Tissue Metabolism in Chlorosis." The cause of poverty of hæmoglobin in the blood must be due to increased destruction or diminished new formation of the coloring matter of the blood, or to a combination of the two processes. Not one positive sign is known which proves that in chlorosis more hæmoglobin is destroyed than in health. Some distinct points lead to the belief that the normal quantity, and probably much less, is all that is destroyed. The defect is due to some error in new blood-formation. Some restricted exceptions exist in anæmia caused by profuse acute hemorrhage and by acute nephritis. Here there is an œdema of the blood. The plasma is so diluted that the blood-corpuscles swell up and appear relatively poorer in hæmoglobin. In all processes which induce much destruction of this constituent of the blood, as infectious diseases and numerous intoxications, there is principally a destruction of cells (erythrolysis). For a time iron as a remedy fell into disrepute, in consequence of experiments on animals, and a few observations on man. These doubts were more often expressed by physiologists and pharmacologists than by practising physicians. As there was no increase of iron in the urine after the administration of various iron preparations, it was argued that no iron was absorbed. The weak point of this reasoning is of interest. The intestinal mucous membrane is the place of excretion for the iron and not the urine, which is capable of removing only a few milligrammes. Iron which gets into the blood-current accumulates in the liver and spleen, these organs, magnet-like, attracting it. They are the warehouse of the body for superabundant iron, which is given off very gradually by these organs, and is removed by the intestinal juice from the body. How do the iron salts which are absorbed act as remedies? Is the chlorotic organism wanting in atoms of iron around which the hæmoglobin molecule can be built up? Every girl developing chlorosis takes up in daily food more iron than the most extravagant estimate demands. But this iron is exclusively contained in nucleo-albumins. There is no doubt that the healthy organism takes up iron from nucleo albumins and employs it for the manufacture of hæmoglobin. Why does not the chlorotic patient do the same? Is absorption at fault? On the contrary, absorption is excellent. Iron is absorbed, but is not used. There is diminution of the energy of growth in the hæmatopoietic organs (bone marrow), resulting in the non utilization of the ferruginous nucleo-albumins which are brought by the blood. So far everything is proved. Now for the region of hypothesis. Let us suppose that the iron salts circulating in the blood effect a stimulation of the hæmopoietic cells of the medulla of bones, and that the result of this stimulus is an amelioration of the constitution of the blood. On the other hand, the nucleo-albumins containing iron which are circulating in the blood exert but a weak stimulus on bone marrow. Experience proves that in the treatment of chlorosis any iron salt is more efficacious than the ferruginous nucleo-albumins, like hæmoglobin, hæmotogin, hæmogallol, etc., which pure theorists have tried to foist on the profession. Arsenic gives good results. Yet success is much greater when combining arsenic and iron. Practical experience proves this is the best plan. At health-resorts where there are carbonated ferruginous springs, resident physicians do not recommend these waters to chlorotic subjects, but advise the mineral waters of Levico or Roncegno, which contain arsenic and iron. These substances are closely allied chemically, and exert on the cells an effect that is only quantitatively different. Med Record

Idiopathic Hypertrophy of the Heart and Degeneration of Heart-muscle.—An address upon the foregoing subject, given in abstract form in the *British Medical Journal*, April 7, 1894, was delivered at the International Medical Congress, in Rome, by Dr. S. Laache, of Norway. Idiopathic hypertrophy is defined as enlargement of the heart without obvious anatomical, or rather, mechanical obstacles to the circulation. The valves are either intact or affected only by lesions in nowise proportionate to the clinical symptoms. The etiology presents some points of hygienic or social interest. The chief predisposing causes are heredity, and those conditions which betray their influence by defective nutrition. Among determining causes the most important are alcoholism and excessive muscular exertion. Beer-drinking is the chief cause of pure idiopathic hypertrophy. Athletics has been considered the origin of much cardiac hypertrophy. It is now conceded that if the athlete is of proper age, properly trained, and abstains from alcohol, trouble with the heart does not necessarily follow a reasonable amount of indulgence in sport. Physical overstrain weakens the heart, and so does intellectual overpressure. Modern life in cities is not conducive to that mental repose which is necessary to secure normal circulation. The hygiene of the heart is sadly neglected. Sudden death from cardiac trouble seems to be increasing in frequency. Yet often the diseased heart possesses a power of resistance that is almost incredible, and which led Haller in his day to apply to it the epithet *ultimum moriens*. In Pepper's "System of Medicine" Osler states that symptoms are not necessarily present in simple cardiac hypertrophy, since this is a conservative process and almost always an unmixed good. The pulse of hypertrophy not dependent on valvular lesion is usually firm, full, and strong, of high tension, and regular. It may be increased in frequency, but often is normal. A frequent symptom is an unpleas-

ant feeling about the heart, a sense of fulness and discomfort. Flushings of the face, noises in the ears, flashes of light, and headache are not uncommon. The course of an ordinary hypertrophy divides itself into three stages: the period of development, which varies with the nature of the original factor in development; the period of full compensation, the latent stage, during which the heart's vigor meets all the requirements of the circulation, and this second stage may last indefinitely; and the third period is what is called the breaking of a compensating hypertrophy. It may come suddenly during extra exertion, and death follow from acute dilatation; or more commonly it takes place slowly, and results from degeneration and weakening of the heart-muscle, with consequent dilatation and all its evils. The treatment of hypertrophy consists largely of measures directed toward its maintenance in a degree proportionate to the extra work which the heart has to do. The utmost moderation in food, drink, and exercise must be enjoined. Quiet and regular habits are imperative. Excesses of all kinds quickly lead to impairment of the heart's action. In the hypertrophy associated with arterial and renal disease a special danger exists in the tendency to rupture of vessels. Vigorous heart-beat with very high tension in the peripheral arteries indicates mischief which may be met by prompt measures to reduce the high pressure. A brisk cathartic may avert apoplexy, and the old-fashioned method of bleeding is often justifiable.

The Treatment of Pruritus.—Leloir recommends electricity in pruritus of all types—anal, vaginal, and general—and uses the electric breeze of the statlc machine with the happiest results. Mercurial ointments give immense relief for the time being. Crocker speaks in praise of ammoniated mercury, gr. xx. to ʒ j. of benzoated lard; also the yellow oxide of the same strength, and calomel, gr. x. to ʒ ss. to ʒ j. External treatment is of great service in alleviating the itching, even if it does not cure the disease. Jackson advises general baths with soda (℥ viij. to x. to 30 gallons), or nitric or hydrochloric acid (℥ j. to 30 gallons). After the bath the body is to be dried by wrapping it in a warm sheet and patting it dry; then the skin should be smeared with vaseline and powdered with corn-starch from a dredger. Bulkley first suggested cannabis Indica, ten minims three times a day, in water after meals, gradually increasing the dose to twenty or thirty minims. For children Ellis recommends the daily use of tepid alkaline baths; quinine and cod-liver oil for the strumous; nitro muriatic acid in sarsaparilla, taraxacum, and Fowler's solution. Bronson finds a solution of hydrogen peroxide of great value in general pruritus; also an aqueous solution of ozone, used as a toilet wash, and known commercially by the name of "aquozone." Faradism is often successful in senile pruritus, applied only to the spine by means of a brush electrode. The cold douche is another remedy in the same line that is sometimes of benefit, and is best used in the morning. In local and general pruritus the following formula for external application has given excellent results:

℞. Acid. carbolic ..... ʒ j.—ij.
Liq. potass. ..... ʒ j.
Ol. lini ..... ℥ j.
M. Sig.: Shake before using.

Dust Diseases and their Prevention.—The relation of dust to pulmonary affections is a subject the investigation of which has already led to many valuable practical results, and which is still far from being exhausted. Dust of a non irritating nature is necessarily inhaled into the lungs of town-dwellers, where it causes the dark and mottled aspect so familiar on the post-mortem table. The irritating dust, on the other hand, which is encountered in many occupations, leads to more or less serious pathological conditions of the pulmonary organs. Thus it may cause bronchitis, acute and chronic, emphysema, asthma, bronchiectasis, fibroid conditions, hypertrophy of bronchial glands, and phthisis, with a whole chain of attendant vascular disturbances. These dust diseases, or pneumokonioses, are met with, as every one knows, among millers, masons, miners, grinders, and others who follow occupations which habitually expose them to a dusty atmosphere. This injury is, in the first place, mainly mechanical, and usually has a direct relation to the texture of the material which furnishes the dust. In this way steel particles are more deadly than stone, and the latter than flour. In other cases the injury to workmen is partly mechanical and partly chemical, as in the lead enamel grinding trade. So much for the evil, which is obvious enough, and needs little more than the above passing reference. A great deal more discussion is wanted, however, when we inquire as to what has been done in the way of prevention. The two great preventive measures are undoubtedly free ventilation and the introduction of wet processes. It is a well-known fact that the substitution of wet for dry grinding in Sheffield was followed by a great fall in the number of deaths from phthisis. A similar principle might be applied with advantage in other trades. For instance, the dust raised in grinding lead enamel is of a peculiarly deadly nature, since it acts both as a mechanical and a poisonous irritant. Lead enamel is practically insoluble, and there is no doubt that many of the steps in its manufacture could be carried out equally well by elutriation and other wet methods. Ventilation, again, is often defective in the enamel factories. The beneficial action of a free circulation of air is probably due to the dilution and the removal of noxious particles. Nowhere has the improvement of ventilation been followed by better results than among our mining population. To take a single instance: it has lately been officially reported that in the mining division of Cornwall the proportion of deaths from phthisis or "miner's disease" has of late years decreased. This satisfactory result appears to be due chiefly to the better underground ventilation, consequent on the introduction of boring machinery and of other improved conditions. Some years ago the whole question of miners' phthisis was closely investigated by the Royal Cornwall Polytechnic Society, who offered prizes for sound information, and obtained a quantity of valuable matter, which is to be found in their annual reports of that time. This public-spirited action affords an excellent illustration of the good that can be effected by local bodies, if they will only be content to confine their scientific ardor to subjects at their feet, so to speak, and within the grasp of an average comprehension. Conducted on such lines the work of provincial associations is likely to afford substantial help in arriving at precise facts and figures with regard to dangerous employments. They will be also in a position to acquire exact information as to methods, and to suggest improvements in trade processes. Their data would then be simply invaluable to the scientific man, in whose hands the application of preventive measures must ultimately be placed. When thoroughly sound conclusions have been arrived at it is the duty of legislators to frame laws in accordance with the facts submitted to them. It is a well marked tendency of modern legislation to make compulsory all measures that have been shown to be clearly preventive. Bearing this in mind, one may safely assert that the compulsory legislation of the future will find a large and useful field, so far as the happiness of many members of the community is concerned, in the control of dust-producing occupations. Whatever may be done, it is unlikely that the whole of the mischief could be abolished in each particular trade. The risk, however, could and should be reduced to its minimum. The steady aim of the sanitarian in dealing with dust diseases will be levelled at the preventable margin, and he will not fail to make due allowance for the unavoidable residuum.—*Medical Press.*

Dr. Baillon, the well-known botanist of Paris, has been elected to foreign fellowship in the Royal Botanical Society of London.

MEDICAL RECORD:

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THERAPEUTICS AT THE INTERNATIONAL MEDICAL CONGRESS.

IT may happen that the most successful and largest medical congresses are not particularly rich in therapeutic work. Yet, after all, when the heat and smoke of the day are cleared away, one feels that the important query is this: Has anything been said or read which will make the treatment of diseases more sure and effective?

We have been looking over the records of the International Congress at Rome, and have tried to find what practical therapeutical suggestions were made at that time.

The results of our study, which has been facilitated by a critical review in the *Gazette des Hôpitaux*, have not been very fruitful, nor yet altogether barren. For example, Dr. Petresco, of Bucharest, comes forward again with further facts regarding his treatment of pneumonia with large doses of digitalis. He has employed his method now for thirteen years and treated 1,192 cases, and he has reduced the mortality to 1.22 and 2.66 per cent., while under other treatment the mortality ranges from 7.15 to 35.50 per cent.

A year ago we discussed Petresco's method, which consists of giving eight or ten or even twelve grammes of digital leaves in twenty-four hours. According to the author, it invariably jugulates acute lobar pneumonia in a few days.

Dr. Goffredi, of Naples, calls attention to the value of lactose as a diuretic, particularly in heart disease. It is not so effective in nephritis. Diarrhœa is sometimes caused by the lactose.

Dr. Pucci praises very highly the use of phenocoll in malaria. He gives from one-half to one gramme a day.

After having broken up the paroxysms, the drug is continued five or six days in association with quinine or arsenic. It is also very useful in malarial neuralgia.

A curious contribution to therapeutics is that of Dr. Sanchez Herrero, of Madrid, who recommends a solution of bromide of potash, 50; iodide of potash, 5; and water, 500, in the treatment of epilepsy. Dr. Herrero is evidently not familiar with some of the very ancient formulas for epilepsy, including that of Brown Séquard. We should add that the doctor adds to his treatment hypnotic suggestion twice a week, and that he has cured 19 cases out of 30.

Dr. A. Murre, of Bologna, makes a protest against the abuse of cold water in the treatment of chlorosis, but at the same time thinks that cold water properly used is better than drugs in this condition.

Dr. Tison thinks that the nitrate of aconitine is useful in facial erysipelas, shortening the attacks and lessening the pain. He gives gr. $\frac{1}{60}$ ten times a day.

Von Ziemssen, of Munich, would have us return to the use of transfusion of blood, particularly in grave anæmias.

The best method is the arm-to-arm one without defibrinating, but if this is not practicable he recommends subcutaneous injection of non-defibrinated blood. This ought to be given under chloroform and followed by massage, as the process is very painful. It is safe to say that a treatment involving regular anæsthetization of the patient will hardly become popular, and certainly is not safe.

DR. MITCHELL ON INSANE ASYLUM MANAGEMENT.

THE address of Dr. S. Weir Mitchell before the American Medico Psychological Association, at their meeting held in May last, has just been published (*Journal of Nervous and Mental Disease*), and it promises, we believe, to excite wide attention. Dr. Mitchell, with the consent of the Association, took the opportunity to arraign, in the severest manner, the present methods of caring for and treating the insane in America. He undertook the task evidently with reluctance, but with a keen sense of the duty before him and of the opportunity offered by the very generous attitude of the asylum superintendents. The speaker fortified himself well for his work, not only by a personal knowledge, but by letters sent to him from nearly thirty of the leading neurologists and alienists of this country, giving opinions and suggestions regarding the present methods of managing asylums.

It is unnecessary to say that Dr. Mitchell's address is throughout an interesting and scholarly one, full of wit and satire, yet withal not unkindly or in any way unjust or offensive. And, after all, it is the Boards of Managers, the public, and the politicians which receive the severest castigation. We wish we had space to quote the criticism upon managing boards, their make-up and their methods. There are, of course, good as well as bad managers, but it is true that in the majority of cases the modern asylum trustee has not the slightest conception of the higher and truer needs of a hospital for the insane. The prevailing idea is to look after the farm, the kitchen, and laundry, and to get materials for a satisfying annual report with forty per cent. of "cures" and a balance to the credit of the institution.

As for the medical superintendents: their weakness, he says, lies in this, that they work apart from their fellows and are not in touch with the medical profession as a whole; that they aim only to run smoothly a great hotel or boarding-house, knowing little and contributing nothing to psychology or psychiatry, and least of all to therapeutics. Dr. Mitchell's final words furnish us a picture of the ideal hospital for the insane. We read it

with delight at the skill of the writer, as he portrays what to his fancy the present should, and the future may, furnish us. But we feel also a sense of sadness at the difference between the ideal and the real. And we think of our own State Lunacy Commission laboriously aiming to cut down the price of brooms, and utterly forgetful of the higher needs of hospitals for the insane.

We trust that Dr. Mitchell's address will awaken not only the conscience of those now responsible for asylum management, but will stir the public heart until the politics, penuriousness, and incapacity that surround so much of American asylum work are abolished.

THE POWER OF A DIPSOMANIAC.

Peter the Great was an enormous consumer of brandy, and, to drop to modern times, Webster was not strictly temperate, and Lincoln had some very able whiskey-drinking generals; but history furnishes no account of dipsomaniacs who were sound in judgment or great in action. Dipsomania is a morbid condition, characterized by the irresistible obsession and impulse to drink, coming on in attacks during which the patient abandons himself entirely to the craving for liquor. Dipsomaniacs may appear perfectly rational between their seizures, and may transact business with apparent soundness of mind. Nevertheless, they still possess something unbalanced and false in their mental make-up. Dipsomania always occurs in persons who have a psychopathic constitution; they belong to the class called by the French the *degenerate*. Consequently, one will always find in their character some peculiarity which puts them out of the ordinary, and among a class which we cannot entirely trust. Their eccentricities may be harmless, or may be shown in some moral perversion or monomaniacal enthusiasm. A person who has dipsomania is essentially one whose judgment is weak and whose actions may be erratic, perhaps picturesque; or, on the other hand, foolish, cruel, or criminal.

The reports of the present extraordinary riots and disturbances which have paralyzed trade, destroyed property, and terrorized whole communities, is shocking, yet, under the circumstances, not so very surprising. Such men sometimes have a power of eloquence and organization sufficient to accomplish at times a great good, but more often enormous evil. But it shows something vitally defective in the local government of some of our cities and States, when an irresponsible enthusiast can bring about such things as we have witnessed in and about Chicago during the past fortnight.

ANOTHER NEW HOSPITAL.

The Chambers Street Hospital is about to move from its present quarters into a new and larger building at the corner of Hudson and Jay Streets. The present hospital has been occupied since 1875. It was formerly a police-station, and has become quite inadequate for the work demanded. The Chambers Street Hospital has for many years done an immense amount of valuable work, more particularly in surgical and accident cases. The annual number of visits to it is over sixty-five thousand, and three ambulances are kept busy night and day. The new hospital is a large five-story building, fire proof, and equipped with every modern convenience.

Along with the excellent philanthropical results of the Chambers Street institution, there is another which most will consider minor and incidental, viz., it has rendered a down town practice impossible. In other words, accident and emergency cases are all taken promptly to the hospital and never to a private office, however well able to pay the patient may be. Of course, if this is the best thing for the people as a whole, the physician must submit. At any rate, institutional medicine has full swing in the down town district.

News of the Week.

Dr. Solomon Van Etten, one of the oldest and best-known physicians in Orange County, died suddenly at his residence in Port Jervis, July 7th, of apoplexy. He was sixty-five years old. He was a graduate of the Albany Medical College, class of '55. During the civil war he was brigade surgeon in General Terry's division, and retired from the service with the rank of Lieutenant-Colonel. He practised medicine in Port Jervis until his death. He ran twice for Assembly on the Republican ticket, was United States Medical Examiner for the Orange and Sullivan district during the administrations of Grant, Hayes, and Harrison, and two years ago was elected Medical Director of the Grand Army for the department of the State of New York.

Dr. W. R. Adamson, of this city, died on July 6th at his summer residence at Lake George. He was forty-two years of age, and was born in Stockton, England.

Births and Deaths.—*The Southern Medical Review* is a new monthly that comes to us from Houston, Tex. It is edited by Dr. N. J. Phenix, but arises from no ashes. *The Railway Surgeon* is the title of a new monthly. The *National Medical News*, the *Epitome of Medicine*, the *Country Doctor*, the *Weekly Medical Bulletin*, the *American Gynecological Journal*, and the Atlanta *Journal of Surgery, Gynecology, and Obstetrics* have ceased to appear.

The Plague.—The bubonic plague, the terror of Europe even to the close of the seventeenth century, has again made its appearance in China, where it is more or less endemic, as it is in Asia Minor. The *British Medical Journal*, while admitting the vividness of the picture drawn by Defoe, points out that "while there is much exaggeration in his 'Plague of London,' his description of the phenomena of the disease is fairly accurate. The present title is derived from the swelling in the groin. In the earlier plague, a similar swelling in the axilla was a frequent symptom. The disease is a rapid, malignant, contagious fever, accompanied by buboes, carbuncles, and livid spots. At least two thirds of its victims die. Its symptoms are violent headache, accompanied with violent tremors alternating with intense heat. The eyes become red and assume a ferocious aspect, resembling those of victims of hydrophobia. The pain extends from the head to the spine, joints, and limbs. Then follow vertigo and delirium. The tongue is dry and yellowish. Respiration is difficult, nausea occurs, but rarely vomit-

ing. The disease runs its course in from three to seven days. The patient often dies in a few hours. The first known appearance of the plague in Europe occurred 430 B.C., when it depopulated Athens, reaching there from Egypt by way of Libya. It was brought into Europe by the returning crusaders, and has frequently appeared since, always coming from some part of the Turkish dominions. It appears in lower Egypt, Syria, and Turkey about every seven or ten years. It has often made its appearance in London, the most frightful visitation being in A.D. 430, when there were scarcely enough living left to bury the dead in all England. In A.D. 716 Constantinople lost 200,000. In 1348 Germany lost 90,000. It has scourged various parts of Europe from time to time since, carrying off hundreds of thousands at each visitation. In Egypt 800,000 died in 1792. The latest visitation of which we have an account at hand was in 1813, when it was exceedingly fatal in Egypt and in Malta."

American Academy of Medicine—The nineteenth annual meeting of the American Academy of Medicine will be held at the Waumbek, Jefferson, N. H., on Wednesday and Thursday, August 29 and 30, 1894. The greater part of the time is to be devoted to the discussion of certain problems relating to the medico-social relations of the medical profession to the "dependent classes." Arrangements have been made for a special excursion from New York and Boston and return at reduced rates. A choice is offered of an eleven days' excursion, including most of the expenses, or of returning immediately at the close of the meeting, and is open to anyone desirious of attending the meeting, whether member of the Academy or not. Any additional information about the meeting or the excursion may be obtained from Charles McIntire, *Secretary*, Easton, Pa.

American Electro Therapeutic Association. — The fourth annual meeting of the American Electro-Therapeutic Association will be held in New York, September 25th, 26th, and 27th, at the Academy of Medicine.

Salicyd Chloroform is a combination of chloroform with salicyd. It is a crystallized substance, which on warming gives off perfectly pure chloroform. Dr. Hans Schmid has used it in one hundred and sixty-six narcoses, and recommends it as being safer and more pleasant than the ordinary preparations.

The German Commission of Anæsthesia.—At the Twenty-third Congress of the German Surgical Association it was voted to continue the general investigation into the statistics of anæsthetics which the society has been engaged in for the last four years. Reports are desired until March 15, 1895. Consideration of the following points is especially urged: Specification of the time of observation, of the anæsthetic used, and the number of times exhibited; reason for administration; apparatus used; duration of unusually prolonged narcosis; amount of material used; the concomitant use of other drugs, as morphia, and the amount; undesirable phenomena or sequelæ.

The Faculty of Fort Wayne College of Medicine have adopted a three years' graded course, the work done in which is based upon the four years' graded course recommended by the College Association.

A Death from Hydrophobia.—A case of death from hydrophobia has occurred at the Pasteur Institute; but the patient was already in a hopeless condition at the time he was admitted. Mr. Walter E. Orcutt, a hotel keeper of Northampton, Mass., was bitten on the wrist by a pet dog on May 23d, and although the wound was very slight, he took the precaution of having it cauterized. It healed perfectly, and he thought no more about the matter until June 23d, when he was seized with alarming symptoms, and was at once brought to the Pasteur Institute in New York. His friends were assured by the physician in charge, Dr. Labadie (Dr. Gibier's assistant), that no treatment would now be of any avail, and he died on June 26th. In this instance, the more violent manifestations of rabies were in a great measure lacking, but the patient rapidly succumbed to paralysis of the nervous centres.

American Public Health Association.—The Twenty-second annual meeting of the American Public Health Association will be held in Montreal, Canada, on September 25 to 28, 1894, under the presidency of Dr. E. P. Lachapelle, of Montreal.

The Massachusetts State Board of Registration of Physicians and Surgeons.—The governor has made the following appointments for the first Board of Registration under the new Medical Practice Law: E. J. Forster, of Boston, for seven years; W. P. Bowers, of Clinton, for four years; D. B. Whittier, of Fitchburg, for five years; A. C. Walker, of Greenfield, for one year; S. H. Blodgett, of Cambridge, for three years; C. Edwin Miles, of Boston, for two years; A. L. Chase, of Randolph, for six years. Drs. Forster, Bowers, and Walker are members of the Massachusetts Medical Society; Drs. Whittier and Blodgett are members of the Massachusetts Homœopathic Society; and Drs. Miles and Chase, of the Massachusetts Eclectic Society.

Harvard Medical School.—The graduating class of the Harvard Medical School this year contained one hundred and twenty-seven men, and was the largest class ever graduated.

Unsanitary Edgewater.—The Richmond County (N. Y.) Medical Society, in a series of resolutions, declare that small-pox is prevalent there in consequence of the neglect of the health authorities, that the village for the same reason is in an unhealthful and filthy condition, and appoint a committee to co operate with the president of the village, that the necessary reforms may be made.

The Colorado State Medical Society.—At the recent meeting of the Colorado State Medical Society, held in Denver, June 19, 20, 21st, the following officers were elected for the ensuing year: *President*, Dr. Hubert Work, Pueblo, Col.; *First Vice-President*, Dr. J. R. Robinson, Colorado Springs; *Second Vice-President*, Dr. E. Stuver, Rawlins, Wy.; *Third Vice-President*, Dr. Laura Liebhardt, Denver, Col.; *Treasurer*, Dr. W. F. McClelland, Denver, Col.; *Corresponding Secretary*, Dr. C. K. Fleming, Denver, Col.

Strophanthus is a valuable and safe remedy. It is a cardiac tonic, a diuretic, and quickly relieves præcordial pain and dyspnœa. The tincture is the best preparation. It should be given in small (ɱij) doses, gradually increased and combined with stimulants and

anti-spasmodics, such as ammonia and ether. It is a most useful drug in aortic regurgitation, as its power of lengthening diastole is not so great as digitalis, nor has it so marked a cumulative action; and any danger which may lurk in its administration is considerably lessened by its combination with ether.—Dr. Taylor.

New York Polyclinic.—Dr. J. Riddle Goffe has been appointed Professor of Gynecology in the New York Polyclinic.

On Periodical Testing of Eyesight in Schools.—Mr. Priestley Smith read a paper on this subject recently before the Ophthalmological Society of the United Kingdom. Authorities, he said, were agreed that advantage would accrue from an annual testing of the eyesight of school children, and several commissions had spoken to this effect, and formulated definite proposals. Hitherto no considerable advance had been made toward this end, for the proposals usually put forward had been that the refraction of every scholar should be ascertained once a year by the school doctor. It would be a long time before every school had its school doctor and every school doctor was an efficient oculist. The necessities of the case could be met more easily, and would, he hoped, be so met in a large number of schools throughout the country before long. The governors of King Edward VI.'s schools in Birmingham, which comprised about twenty-two hundred boys and girls, aged from eight to nineteen, had established three years ago a periodical physical examination of the scholars in regard to height, weight, chest measurement, eyesight, and hearing. The eyesight test was carried out by certain teachers appointed for the purpose. It made no pretence of being a scientific proceeding; there was no attempt to estimate refraction or diagnose disease. Any such attempt was worse than useless unless the examiner were an ophthalmic expert. In every case in which the vision in either eye was less than six-eighteenths, an intimation of the fact was sent to the parent, and with him rested the responsibility of obtaining the necessary advice and choosing the adviser. The Anthropometric Committee appointed at the last meeting of the British Association for the Advancement of Science, having Professor Cleland and Professor Windle for its Chairman and Secretary, had lately issued an inquiry to a large number of schools as to whether and to what extent periodic physical examination of the scholars was in force. From the replies received it appeared that the eyesight was tested in eight out of four hundred and eighty-three boys' schools in England, Scotland, and Ireland (Whitaker's list); and in six of one hundred and twenty-nine girls' schools in England; while color vision was tested in three only of the whole number. Many of the principals, however, expressed willingness to take up anthropometric work on receiving directions for carrying it out. The speaker laid before the meeting the printed directions which had been drawn up, and which were to be sent, in the first instance, to about two hundred schools. The eyesight test included in this scheme was practically the same as already in operation in the King Edward schools in Birmingham. It involved practically no expense and very little trouble to the school authorities, and it interested at least one teacher in every school in the eyesight of the scholars. In advocating this system, the speaker did not in the least undervalue the importance of a thorough medical examination of schools, and he knew that many schools already had duly appointed medical officers competent to deal with errors of refraction, but these were exceptions. By making this simple eyesight test a part of the anthropometric scheme now being so energetically pushed by the Committee of the British Association they would, he was confident, attain the desired end in a large number of schools where it could hardly be attained in any other way.

Lightning Stroke.—"Ball lightning," the *fulmen globulare* of the older meteorologists, is the most dangerous and destructive of the forms which lightning is known to assume. Fortunately, however, it is the rarest. A narrow escape from death by its stroke occurred lately in the person of a distinguished surgeon of the Belgian school, Dr. L. Dandois, Professor of Surgery in the University of Louvain, who had gone to the neighboring town of Linden to visit a patient, and on his return, having alighted from the train to continue his homeward journey by road, was overtaken by a heavy thunderstorm. The sky became as [illegible] difficult for him to

tions; and therefore that the nucleins from different sources would be very different, *e.g.*, that from yeast different from that from the spleen or the thyroid gland, etc., the number of kinds being limited only by the number of different cells.

It is the chemical basis of the nuclei of the cells, sometimes called by the histologists chromatin, from the ease with which it takes up staining materials. Chemically, the nucleins are proteid bodies containing a large amount of phosphorus, existing in the form of nucleinic acid, this acid being the same in all nucleins; but, combined with different bases gives us the different resulting nucleins. On reduction and recomposition they yield some of the so-called xanthin bodies. In general they are insoluble in dilute acids and soluble in dilute alkaloids, and resist peptic digestion.

Some substances histologically nucleins do not yield any xanthin base, and such are now called para-nucleins, and some of these are the antecedents of the true nucleins.

Some nucleins are combined with albumins forming nucleo albumins. Miescher was the first to study appreciatingly the nucleins, and was the one who named them.

He prepared his specimens for investigations from pus corpuscles, and later from the yolks of eggs.

In 1874 he made his most important contribution to the knowledge of nucleins by working with the spermato- [illegible]

stopped or cured by medicines. 3. [illegible] be done at the outset of an attack is to send the patient to bed, so as to save strength from the beginning. 3. No strong purgative medicines are desirable. 4. As the fever develops and the strength grows less, light food should be given at short intervals—*i.e.*, water, toast water, barley-water, milk and water, light broths (not made too strong or too gelatinous). 5. If there be restlessness or much agitation of the nerves, wine (port, sherry, or claret), or brandy in moderate doses at short intervals. This must be directed medically, but in general it may be said that the amount required is that which induces repose and sleep. 6. The bowels may be left to themselves. If unmoved for twenty-four or thirty-six hours a lavement of warm water may be necessary, but this will be directed medically. 7. The restlessness or wakefulness in fever is best remedied by the careful giving of wine or spirit with the food, or in hot water. Sedatives such as opium are inadmissible—mostly injurious. 8. The bedroom to be kept at a temperature of 62 to 65° F.

9. Great care is necessary to keep the bed clean and sweet. This is most easily done by having a second bed in the room, to which the patient can be removed for two or three hours daily, while the other is thoroughly aired and the linen changed. 10. All fatigue to be sedulously avoided. No visitors admitted, and no other person but a nurse and one attendant to help her. 11. Patient's room never to be left unattended for a moment, as in the delirium of fever patient may jump from bed and injure himself. 12. As to medicines and the treatment of complications, the immediate medical attendant must be responsible. 13. As it is possible that the discharges from the bowels in typhoid fever may be a source of contagion, it is desirable that before being thrown down the closet they should be largely mixed with Condy's fluid or some other disinfectant. On the same principle the strictest cleanliness must be observed in the sick-room. 14. There is no reason to believe that typhoid fever is contagious from person to person, in the ordinary way. The largest experience shows that it does not extend, like an ordinary contagious disease, to nurses or others attending upon patients suffering under the disease.

[illegible] at the Wentworth, Jefferson, N. H., on Wednesday and Thursday, August 29 and 30, 1894. The greater part of the time is to be devoted to the discussion of certain problems relating to the medico-social relations of the medical profession to the "dependent classes." Arrangements have been made for a special excursion from New York and Boston and return at reduced rates. A choice is offered of an eleven days' excursion, including most of the expenses, or of returning immediately at the close of the meeting, and is open to anyone desirous of attending the meeting, whether member of the Academy or not. Any additional information about the meeting or the excursion may be obtained from Charles McIntire, *Secretary*, Easton, Pa.

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Awards at the International Exposition of Hygiene in Rome.—The German exhibitors figure prominently in the official list of awards made by the jury of the International Exposition of Hygiene held concurrently with the International Medical Congress in Rome. From the report of the Exposition already given in our columns, the reader will be prepared to find that the Imperial German Gesundheitsamt received the highest award (the great diploma of honor); while minor honorary diplomas were given to the Prussian War Office, to the city of Berlin, to the Bavarian Ministry of the Interior, to the city of Munich, to the Home Office and War Office of Saxony, and to other bureaux (government and municipal) of the Fatherland, as well as to Professors Salkowski, Kossel, and Brieger, of Berlin; Jaffé, of Königsberg; Kühne, of Heidelberg; Drechsel, of Bern; and C. Zeiss, of Jena. The gold medal was obtained by the Anilin-Fabrication Company of Berlin; by Schering, of Berlin; by Merck, of Darmstadt, and by two other German houses; while silver medals were literally showered on exhibitors of the same nationality for contributions to sanitary *matériel*. Among the recipients were professors in the various seats of learning throughout the Fatherland—Berlin in point of numbers heading the list. Italy, again, is well satisfied with the appreciation of her mineral waters embodied in the awards of the jury. On the court representing the Hydrological Department were the "Dean of French Hydrology," Professor Labat, of Paris, and the head of the German hydrological societies, Professor Winternitz, of Vienna, while Italian jurymen were the Senator Dr. Giulio Bizzozzero, Professor of General Pathology in the University of Turin, and Dr. David Borelli, Professor of Clinical Medicine in the University of Naples. Among mineral waters, Italian and foreign, the highest award was given to that of Fiuggi, which received the silver-gilt medal; silver medals were adjudged to Decref (Madrid) and Perrin (Vichy) for their waters; and the Giesshübl-Puchstein, the Franz Josef Bitterquelle, and the Tuscan Cinciano received bronze medals. Fiuggi, to which the place of honor has been assigned, is a water of great antiquity, which, like many good things Italian, has been allowed to fall into desuetude till now, when a vigorous effort is being made to reinstate it in the popularity it enjoyed in mediæval and classic times. Its source is in the Hernican country to the south of Rome, a beautiful tract of the Apennines celebrated by Virgil, and its efficacy in subjects of the uric diathesis is attested by clinicians of the stamp of Dr. Guido Baccelli, President of the Eleventh International Medical Congress, the Senator Dr. Mariano Semmola, Professor of Clinical Medicine in the University of Naples, and, indeed, by nearly every consultant of note throughout the peninsula. It ought certainly to be better known in this country, as its virtues, especially in gastro intestinal catarrh, notably, such as proceeds from uric and oxalic concretions, have been attested by British medical men practising in Italy.

M. Pasteur on Rabies.—M. Pasteur addressed the following reply to a lady who recently wrote to him for information respecting the symptoms of rabies: "M. Pasteur has had pleasure in receiving your letter of May 31st. The bite of a dog is only dangerous when the dog has got rabies. If there is any doubt in respect to this, the manner in which it may be found out is the following: Put the dog that has bitten where it can do no further harm. Have it examined by a vet., and if it has the rabies its characteristic symptoms will not be long of being observed, and the animal will certainly die in eight days. If at the end of that time no symptoms of rabies has been observed, the bite cannot cause hydrophobia, and there is no reason that the animal should be destroyed."

Attending Physicians and Consultation-fees.—An esteemed correspondent recently inquired:

"In consultations, is not the attending physician entitled to a consultation-fee in addition to his ordinary visiting-fee?"

We answered, "Yes."—*Medical News.*

All the same, the attending physician rarely gets it, and we see no particular reason why he should, though he might reasonably charge double his ordinary fee if much of his time is consumed.

Society Reports.

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from page 24.)

AMERICAN PHYSIOLOGICAL SOCIETY.

Seventh Annual Meeting, held in Washington, D.C., May 30 and 31, and June 1, 1894.

PRESIDENT HENRY P. BOWDITCH, M.D., OF BOSTON, MASS., IN THE CHAIR. WARREN P. LOMBARD, M.D., OF ANN ARBOR, MICH., SECRETARY.

FIRST DAY, WEDNESDAY, MAY 30TH.

A MOTION was made to appoint a committee of three to consider the advisability of publishing an *American Journal of Physiology*, and to report at the next meeting in December, 1894. Committee appointed by the president, consisting of Drs. Lee, Porter, and Donaldson.

Effect of Fatigue on the Rate of Transmission of Nervous Force.—DR. HENRY P. BOWDITCH, of Boston, read a paper with this title. The most important results obtained were by noticing the results of prolonged stimulation. Thus far there has been discovered no production of heat, nor chemical change, nor any great amount of fatigue produced by prolonged stimulation; shown in regard to the last point, for example, by the continuous action of the vagus on the heart; and, in sensory nerves, by long continued pain. But is there not some change?

The best understood phenomenon of nerve force or function is, perhaps, the rate of transmission, the generally accepted average of which is about thirty metres per second. Is the rate affected by prolonged stimulation?

The method used by Dr. Bowditch in his experiments was the nerve-muscle method. To use this effectually, there must be some method of "blocking" the current, or interrupting it between the nerve and the muscle, so as not to wear out the muscle. Of the various methods of doing this, by interrupting the current, by chemical action (*e.g.*, by action of atropia or curare on the muscle, or local application to the nerve, at point of entrance into the muscle, of ether), or by pressure (which latter Dr. Bowditch found entirely useless), he chose the use of ether, using a mixture of 20 parts of ether, 8 parts of six-per-cent. salt solution, and 2 parts of alcohol.

He found the current, or connection between the nerve and muscle, blocked after application for from one to six minutes; and on removal of the ether, the nerve recovered its conductivity in from two to four minutes. His first effort was to obtain an average effect on a number of different specimens, in order to compare with the normal.

He found, however, that there was a very wide range of results obtained by experimenting with frogs' nerves, and that the different nerves acted very differently. He showed by diagrams that the different effects showed a variation of from 10 to 15 metres up to from 45 to 53 metres, after use of ether or stimulation, or both, *i.e.*, in the lowest of his experiments the rate of the first nerve was 15 metres, and after use of ether or stimulation it was reduced to 10 metres; and in the highest case was 53 metres, afterward reduced to 43 metres per second.

In most cases the range of each individual experiment was not large, being from 5 to 10 metres; but in some was very large, being in one case from 20 to 40 metres per second. Dr. Bowditch had found a similar range in the experiments of other investigators, *e.g.*, in Helmholtz's a variation from 4 to 20 metres. He therefore feels that with the methods at present at our command, that we cannot hope to arrive at the true normal standard, the great variations depending upon conditions which we cannot control.

Dr. Bowditch conducted his experiments in the usual moist chamber, at a nearly uniform temperature. He found that rest did not affect the results, *i.e.*, the preparation did not deteriorate after keeping from one to three hours. In general he found that after use of ether alone the rate was somewhat lower than the generally accepted normal, viz., eighty-two per cent. of normal rate; that after stimulation it was slightly lower still; and after both, still lower, being about seventy-six per cent. of normal. But he considers the decrease comparatively slight; and that thus far he must conclude that prolonged stimulation, *i.e.*, fatigue, does not markedly affect the rate of transmission. He hopes to continue the investigation of this interesting question by photographic and electro-metrical methods.

The Physiological and Therapeutic Action of Nuclein.—DR. VICTOR C. VAUGHN, of Ann Arbor, read the paper. Physiologically nuclein may be said to form the chief chemical constituents of the lining parts of cells, the element by virtue of which the cell grows, develops, and reproduces itself. It is its function to utilize the pabulum within its reach. It is evident, then, that those tissues containing a large number of cells must contain the relatively largest amount of nuclein. It would also seem that it is by virtue of their nuclein that the different organs manifest their individual peculiarities and functions; and therefore that the nucleins from different sources would be very different, *e.g.*, that from yeast different from that from the spleen or the thyroid gland, etc., the number of kinds being limited only by the number of different cells.

It is the chemical basis of the nuclei of the cells, sometimes called by the histologists chromatin, from the ease with which it takes up staining materials. Chemically, the nucleins are proteid bodies containing a large amount of phosphorus, existing in the form of nucleinic acid, this acid being the same in all nucleins; but, combined with different bases gives us the different resulting nucleins. On reduction and recomposition they yield some of the so-called xanthin bodies. In general they are insoluble in dilute acids and soluble in dilute alkaloids, and resist peptic digestion.

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Some nucleins are combined with albumins forming nucleo albumins. Miescher was the first to study appreciatingly the nucleins, and was the one who named them.

He prepared his specimens for investigations from pus corpuscles, and later from the yolks of eggs.

In 1874 he made his most important contribution to the knowledge of nucleins by working with the spermatozoa of salmon. In a fresh state these were found to be very resistant to most chemical reagents, but were found to be destructively affected by dilute salt solutions (ten to fifteen per cent.).

The head of the spermatozoa was found to be practically free from albumin, and to consist of nuclein and small quantities of lecithin, cholesterine, and fat.

The nuclein molecule is wonderfully retentive of life, and possesses marked powers of self recuperation after being partly decomposed; as shown by the fact that after being partly decomposed by salt solution, if this solution be diluted by the addition of large quantities of water, the nuclein is restored to its original form and constitution.

Nuclein may be very markedly changed in chemical composition and functional powers, without changing its visible properties or form, which would readily account for the failure oftentimes to find, by macroscopical or microscopical examination, lesions distinctive enough or of sufficient character or extent to account for the severity of symptoms observed during life.

An artificial nuclein has been prepared by Lieben, which, however, is not a true nuclein, but a para-nuclein.

A close relation seems to exist between nuclein and uric acid, judging from the close relation of both to the xanthin bodies. Thus spleen nuclein when oxidized yields uric acid.

This origin of uric acid from nuclein will explain the origin of uric acid in the mammalian body, showing really the number of nucleated cells in the body which are being recomposed and not, as heretofore believed, being the result of imperfect oxidation of food stuffs, the complete product of which is urea.

Some of the nucleins have germicidal properties more powerful than corrosive sublimate. The germicidal constituent of the blood is nuclein, furnished by the polynuclear white corpuscles. Being thus germicidal can they be used to prevent or arrest the growth of germs in the animal body; and if so, in what manner do they act? Nuclein seems to be entirely non poisonous, large doses having been injected and administered by mouth in human beings with little or no unpleasant reaction. In some cases it caused a temporary elevation of temperature and a slight local reaction, but neither to any dangerous extent. He has used it in membranous tonsillitis, in streptococcus diphtheria, and in indolent ulcers; and in all cases with good effect. The action of nuclein in giving immunity from certain diseases is marked, as shown in some cases where it was used on rabbits, rendering them immune to the diplococcus pneumoniæ; but this is not due to its direct germicidal action, but to its power of stimulating some organ whose duty it is to protect the body against bacterial invasion.

Dr. Vaughn thinks that for immunity and cure of infectious diseases we must look for, 1st, Non-poisonous germides of cellular origin; and 2d, substances which stimulate the activity of those organs whose function it is to protect the body against those diseases. He thinks that nuclein fills both of these demands.

From the investigations of Dr. Huber he finds that, "1, The subcutaneous injection of nuclein increases the number of white blood corpuscles; 2, this increase occurs in both healthy and tuberculous persons; 3, the increase varies with the individual; 4, the increase is mostly in the polynuclear cells; 5, it generally appears within three hours, and disappears after forty-eight hours."

Action of Calcium on the Heart.—Dr. W. H. Howell then made an interesting demonstration of the effect of calcium salts on the contractility of the heart. He had the heart of a turtle in a bulb, connected with a very delicate water manometer; and having connection by a stop cock with three flasks containing: 1, Normal sheep's blood; 2, sheep's blood with the calcium salts precipitated by excess of sodium oxalate; and 3, sheep's blood with excess of calcium chloride. In the first instance the heart was fed with the normal blood, showing normal contractions; then it was fed with the decalcified blood, upon which the contractions became less frequent, the diastole being lengthened, and also irregular and jerky in its action, finally coming almost to a complete standstill, practically a potash paralysis. Then the blood with excess of calcium chloride was turned into the heart, which very soon began to beat more frequently and regularly and was finally restored to a practically normal condition.

Dr. Howell said it had been so far impossible to decide absolutely whether it was the absence of the calcium salts or the presence of the excess of the oxalates which caused the paralysis, it being at present practically impossible to precipitate all of the calcium salts without an excess of the oxalates. We cannot exactly neutralize the calcium salts, as we do not know in any particular sample of blood just how much is present in soluble and ergo precipitable form, and how much is in composition more or less stable with proteid and other bodies.

Ptyalinogen and Pexinogen.—Dr. J. W. Warren then made some remarks on the qualitative determination of ptyalinogen and pexinogen. The best way of determining the presence of pexinogen or the forerunner of the milk-curdling ferment was by chloroform water. Hammerstein, he said, had found pexinogen in nearly all animals; but in the mucous membrane of the ox it was not found, the pepsin being there already formed. Dr. Warren had found the opposite condition present in his experiments with the ox.

Ptyalinogen, the forerunner of the salivary ferment, ptyalin, he also determined by the chloroform-water method. He had found it present in almost every case excepting in the cat. The principal objection to the chloroform method was the difficulty of entirely removing the chloroform, and the fact that, if present, it gave a reaction with Trommer's test, simulating that of sugar. The quantity of ptyalinogen is small and yet it was always genuine. In some cases, of sheep and rabbits, he could get no results either for ptyalinogen, or for ptyalin itself in watery or chloroform-water extracts.

Dr. Warren used a one per-cent. solution of sodium fluoride, which acts as an excellent preservative of the different ferments of the body, and which does not reduce the reagents used for testing for sugar.

Ptyalinogen is not very soluble as compared with the forerunners of the other ferments of the body; and is apparently not so stable and permanent. No result was considered satisfactory nor reported where the action did not appear within one hour.

Chemistry of Muscle.—Dr. G. N. Stewart then read a paper on this subject. He stated that his first experiments had been to get information as to whether the proteid substances usually said to be present in muscle tissue, and which had all been derived chemically from dead muscle, existed as such in living muscle.

He differed from and criticised Halliburton's theories, as to the presence of myosinogen in the muscle tissue, and the fact of its clotting to produce the rigor mortis; and also criticised Halliburton's conclusions from his method of practical precipitation of the proteid borders of muscle tissue.

Following, however, Halliburton's methods to a certain extent, he found the quantities of myosinogin and the other proteids quite different in the different muscles of the body; *e.g.*, those in heart muscle different from those in the skeletal muscles and some differences in the different groups of the skeletal muscles; the larger percentages of easily coagulable proteids being as a rule in the more active and more easily irritated muscles. The rigor mortis being different in different muscles, are not the extracts of the different muscles also different in the quantities and coagulability of their proteids and is the myosinogen of one different from that of another? Dr. Stewart thinks that such differences do exist.

In a series of experiments on fifty frogs' hearts and skeletal muscles he found slight difference in the temperature at which the proteids of these heart-muscles coagulated and that at which proteids from skeletal muscles from the same frogs coagulated.

In the case of rabbits' hearts he found the same result. Also by direct application of heat to the muscles, it needed a higher temperature to cause a "rigor mortis" in the heart than in the skeletal muscles.

In the following tables, which illustrate these results:

I. Is the percentage precipitate occurring between 47° and 49° C.
II. Between 56° and 58° C.
III. Up to 65° C.
IV. The balance of coagulable proteid with boiling.

Also according to Halliburton's results of fractional precipitation and his nomenclature:

I. Is para myosinogin.
II. Is myosinogin.
III. Is myoglobulin.
IV. Is serum albumin.

Halliburton claimed that para-myosinogin did not clot; but according to the fractional precipitative method Dr. Stewart found it present in muscle clot in large quantity, and therefore judges it essential to the formation of the clot, and fully as much so as myosinogen.

These tables show percentage of different proteids, as

per above explanation, in the heart and skeletal muscles of a rabbit:

	Heart. Per cent.	Skeletal. Per cent.
I.	76.1	70.9
II.	Slight	19.7
III.	"	Slight
IV.	23.9	9.41

In one experiment Dr. Stewart heated a muscle from a cat's leg at 42° C. for ten hours. Then made extract of it, and found that all the proteids excepting serum albumin were precipitated at about 42° C., showing that the rigor mortis (thus artificially produced) causes some change in the muscle proteids, if Halliburton's method of fractional precipitation, as precipitating pure chemical bodies, be accepted.

In another case Dr. Stewart prevented rigor mortis of a muscle by pressure, and then upon making extract and comparing it with results from a muscle in which rigor mortis had taken place found very little difference between the two, as will be seen from the following table. "A" being the one in which rigor mortis had taken place; "B" being the one in which it had been prevented:

	A. Per cent.	B. Per cent.
I.	70.	68.2
II.	21.4	24.8
III.	8.7	6.9

He thought that, theoretically, if muscle were examined after rigor mortis had passed off, there should be found a difference in clotting power as compared with muscle examined before rigor mortis; but had not found it so.

Dr. Stewart concluded that the methods at present available for investigation of this subject were incomplete and faulty and hoped for better ones soon.

Second Day, Thursday, May 31st.

Circulation Time in Organs.—Dr. G. N. Stewart, of Harvard University, read the paper. As to method, it was necessary to cause some condition of the blood which could be easily noted, would disappear quickly, and which would admit of new and repeated observations.

Of various possible methods, Dr. Stewart used that of injecting a quantity of salt solution into an afferent vessel, and then determining, by the difference in conductivity of an electric current, caused by the presence of the salt in the blood, the time at which the salt solution had reached the efferent vessel, thus giving the time of circulation through the organ. The electrodes may be placed upon the vessel, and do not need to be inserted into the vessel nor into the blood-current.

He found the time of circulation longest in the kidney (occasionally about as long in the spleen), the average of many experiments being 11.58 seconds. The pulmonary circulation time he found the shortest of any organ in the body (excepting sometimes the coronary circulation), being from two to four seconds It was also more constant than that of any other organ, and might well be used as a sort of unit or standard.

The liver circulation was from four to seven seconds; the thyroid gland, five to six seconds, and capable of reduction by section of the cervical sympathetic; in the spleen the average time was 10.95 seconds. In one case, using an animal which had been used previously to demonstrate the motor areas, and which had spasms during his observation of the pulmonary circulation, he found that time much shorter.

In another case, where an overdose of chloral had been given, he also found the time much reduced, probably due to the marked dilatation of the whole vascular system. For measuring the circulation time in the intestines and the coronary vessels, Dr. Stewart used the method of pigment injections, using two per cent. solution of methylene blue. In the intestines the time was a trifle longer than the lungs, and about one-third as long as in the liver. The coronary time was short, being about three seconds, very little, if any, change being caused by stimulation of the vagus; if any change, it was a decrease of time, not an increase.

Dr. Stewart claimed that the results were not affected, as some had claimed, by the diffusion of the salt solution, as the time during which any one observation was made was not long enough for any appreciable diffusion to take place.

Some Experiments upon Reflex Vaso-constriction and Vaso dilatation.—Dr. W. H. Howell sent a paper with this title, which was read by Mr. R. Hunt. The object of the experiments was to study the conditions under which a reflex fall of the general blood-pressure can be obtained.

If chloral be administered to a rabbit, and the central end of the cut sciatic nerve be stimulated, a fall of pressure occurs, instead of the usual rise.

It is generally held that the sensory nerves contain both pressor and depressor fibres, and that upon fatigue of the vaso-motor centres they are more influenced by the depressor than by the pressor fibres.

Recently Kleen described that a pure muscular stimulation, as by kneading a muscle, caused a fall; whereas a cutaneous stimulation caused a rise of pressure.

Dr. Hamell also has shown that, by cooling the sciatic and stimulating the nerve peripherally to the cooled portion, a fall was caused, which was followed by a rise if the nerve were warmed and again stimulated.

Dr. Howell and Mr. Hunt found that when the nerve was cooled that anæsthesia had a marked effect upon the pressure under anæsthesia, caused by pressure on the cerebrum, in cats, the vagi being cut; mild stimulation of the sciatic at the temperature of the room caused a marked rise of pressure. At 10° C. the same stimulation caused a fall, while at the same temperature a strong stimulation caused a rise of pressure.

At 5° C. both strong and weak stimulation caused a fall. At 15° both strong and weak stimulation caused a rise. The change from a fall to a rise was often very rapid after changes of the temperature.

Ether, alone or with other anæsthetics, seemed to have a marked influence in bringing out the depressor effects; under ether a rise was usually caused by moderate stimulation at the temperature of the room, but a fall at lower temperatures. Curare seemed to have an opposite effect to that of ether, *i.e.*, bringing out more prominently the pressor effects. At low temperatures no fall could be obtained in the curarized rabbit, and at higher temperatures the rise was very marked.

Under acetone chloroform the vaso-motor centres seemed to be not very irritable and the changes in pressure not great. Upon rhythmical stimulation under pressure anæsthesia, only a rise was obtained varying directly with the strength and rapidity of the stimuli. Local application of drugs to the nerve had little or no effect, excepting that some, *e.g.*, ether, completely blocked the impulses.

The cause of the above effects cannot yet be fully answered. Dr. Hamell's method seems good evidence of the existence of two sets of fibres, pressor and depressor, the conductivity of the former being more quickly diminished than the latter by local causes. When drugs are injected into the circulation, probably, or perhaps, the centres themselves are affected.

Brain Centres of the Bladder.—Dr. Isaac Ott, of Easton, Pa., gave the results of a few preliminary experiments on the cerebral centres of the bladder. Previous experimenters had noted that electrical stimulation to the corpora quadrigemina caused a contraction of the bladder. Dr. Ott found that, on cross section of the crura cerebri, a flow of urine followed; also that when the surface of the exposed crura was touched the bladder contracted. If small doses of atropia were administered he still got contraction, but failed to get any after large doses, *e.g.*, gr. ij. of atropine sulphate in an ordinary sized

adult cat. He used only mechanical stimulation. His conclusion was that the centre or centres lie in the crura cerebri, the exact portion of the crura, however, being not yet determined.

Volume Changes in Muscle during Activity and Rest.—Dr. G W. Fitz, of Harvard University, read a paper with this title. He used a plethysmograph on the arm, with indicators giving tracings showing the rapidity, length, and force of the contractions of the muscles, the pulse-beat, and the changes in volume. He found changes in both pulse and volume, but directed attention particularly to the changes in volume. On contraction of the muscles, *i.e.*, in state of activity, the volume was markedly diminished, in quantity varying, in different arms and in different experiments, from 20 to 75 c.c.

He found the crura indicated by the plethysmograph quite different when repeated contractions were rapidly made, as in the milking motion, from that where there was a single long-sustained contraction.

In the stage of fatigue there was a large variation in the volume of the arm, a marked filling up, or increase of volume. With each arm of same patient in a plethysmograph, one exercising and the other quiet, there were slight effects noted in the quiet arm as well as the marked changes in the active one.

The time taken to get the maximum effect was from fifteen to twenty seconds, and a similar time was taken for the arm to refill. These changes, Dr. Fitz claims, are changes in the quantity of fluid in the arm, probably entirely in the amount of blood in the vessels, the quantity of lymph in the lymphatic spaces not being much affected, as the time necessary to cause the change is so short. Also when the shape and relative bulk of the muscles are considered, and the relatively small amount of other tissues in the arm, it seems likely that the change is limited to the muscles.

By the contraction of the muscles the blood is squeezed out of the vessels, both arteries and veins; and there is thus a change in volume and an anæmia of the arm, because for the time being the blood pressure is not enough to overcome the force of contraction of the muscles. When, however, the muscle becomes fatigued, the blood can force itself into the vessels, causing an increase in volume, and a congestion of the arm.

Dr. William H. Howell, of Johns Hopkins University, exhibited some very interesting "plethysmographic curves taken during sleep." He found the arm congested during sleep, and contracted or anæmic during waking; and, taking account of the already known theory of the absence of vaso-motor control in the brain, the quantity of blood there depending upon the condition of the circulation of the other parts of the body, and varying inversely as the quantity in other parts, he brought out a very suggestive indication from the curves, of the probable parallelism between the amount of blood in the brain and the condition and intensity of consciousness.

Upon stimulation of any of the centres, *e.g.*, the auditory centre by any noise, the person experimented upon being asleep, the arm became anæmic, indicating a corresponding congestion of the brain, this change being in direct proportion to the strength of the stimulus.

These experiments led Dr. Howell to suggest a possible theory as to the cause of sleep, viz., that the anæmia known to exist in the brain during sleep, and which has so far been considered to be a secondary condition, is really the cause of sleep. The explanation offered was that the circulation of the brain, or the amount of blood, varies inversely to that of the balance of the body; the vaso-constrictor centre is in a condition of tonic activity during waking, thus keeping the quantity of blood reduced in the body and increased in the brain; this centre becoming fatigued, the body vessels dilate and fill up, those of the brain empty themselves, and when a certain level is reached sleep ensues.

The Cardiac Pleurogram.—Dr. S. J. Meltzer, of New York, read a paper on "The Cardiac Pleurogram and the Nature of the Cardio-pneumatic Movements." If a manometer or other recording apparatus be connected with the mouth, nose, or trachea, while respiration is suspended, respiratory oscillations can be observed coinciding in time with the cardiac movements.

These were explained by Voit in this way: During systole an inflow of air into the lungs occurs to counterbalance the effect of the diminution in size of the heart; the opposite occurring in diastole. Later Ceradini recognized the fact that the change in pressure could not take place as long as the blood thrown out by the heart remained in the thoracic cavity; but it is only when it is leaving the thoracic cavity that the respiratory movement occurs. Therefore the cardio-pneumatic undulations are due not to change in size of the heart, but to change in the quantity of blood within the thorax.

Landois found a short but distinct expiration preceding the main inspiratory movement, and after this main movement two more small respiratory undulations occurred before the new cycle commenced. Registration of the respiratory undulations may also be made by means of apparatus placed in the œsophagus, as done by Martins and by Dr. Meltzer. Many tracings were obtained of the cardiac movements, to which Dr. Meltzer gave the name of cardio-mediostinograms. The distinctness of these tracings seems to depend upon the depth in the œsophagus at which they were taken, least distinct in the cervical region, sharp and clear in the thoracic portion, excepting in the immediate vicinity of the diaphragm, where they were sometimes wholly absent. The results showed the same general fact, viz., an inspiration at the systole, an expiration at diastole of the heart.

Dr. Meltzer showed a number of tracings taken by the œsophageal method, showing the curves of the cardio-respiratory movements very distinctly. In general, in dogs, in each cardiac cycle there appeared a steep systolic down-stroke, followed by a gradually ascending diastolic line with some fine oscillations, showing that during systole the pressure is suddenly lowered, and during diastole gradually returns to its former level. This, as in all the œsophageal-cardiac tracings from the dog, showed a so-called negative pulse.

In experiments on himself Dr. Meltzer found also a negative pulse in the œsophagus down to twelve centimetres from the beginning of the œsophagus; below fourteen centimetres the pulse was positive, showing an up stroke of the indicating lever, or an expiratory movement.

Dr. Meltzer referred to Haycraft and Edie's experiments, from which they claimed that the cardio-respiratory movements disappeared upon lifting the heart away from contact with the lungs, and that the lungs really acted as an oncometer placed about the heart, and that the air in them is affected by the cardiac impulse just as the air in a cardiograph placed against the chest.

To test this explanation Dr. Meltzer made tracings of the cardiac movements directly from the pleural cavity, calling them cardio-pleurograms.

From these he obtained in general the same results as before, with slight modifications due to the different conditions and methods, and therefore argues that since both heart and lungs were far from the openings leading to the tambour, the movements are not due to the lungs acting as an oncometer for the heart, and that they are due, as at first stated, to the change in the quantity of blood in the thoracic cavity.

Dr. Meltzer thought that Haycraft and Edie's results were perhaps due to their method of opening the chest, which caused a very abnormal condition with relation to its surroundings. In rabbits free access of air to the chest cavity caused the cardio-respiratory movements to disappear; in dogs they were diminished, but did not disappear. This, Dr. Meltzer thought, depended upon the different arrangement of the organs in the posterior mediastinal space, in rabbits and in dogs. His conclusion was that these cardio-respiratory movements were nor-

mal, and undoubtedly caused, as above stated, by the changes in the quantity of blood within the thoracic cavity.

THIRD DAY, FRIDAY, JUNE 1ST.

Reflex Time of Winking.—DR. W. P. LOMBARD, of Johns Hopkins University, read a preliminary report of experiments to determine this point. He used a very ingenious apparatus for producing the stimulus—a plunger, worked by electricity, striking the cheek about one inch from the outer canthus of the eye, the stimulation being mechanical. An electric current is broken at the blow of the plunger, and immediately closed by a spring, and again broken by the movement of the eyelid in winking; the time between the two breaks being measured gives the time of winking. Tracings were taken on a drum, of the stimulus and the wink, and parallel with these, of the vibrations of a tuning-fork, of known rapidity of vibration.

The time varied somewhat in different persons, and in the same person at different times; but in general was a little shorter than that determined by previous experiments, being about 0.04 second. If from this be subtracted the time of transmission and the latent period of the muscles, the time will be probably reduced to about 0.03 second.

An Improved Hæmatocrit.—DR. JUDSON DALAND, of Philadelphia, showed, by request, his improved hæmatocrit, for examination of the blood by the centrifugal method. He claimed for it, as advantages over the instruments at present in use, its greater compactness, higher speed of revolution of the frame or spindle carrying the capillary tube; the shorter length of the tube, and its lens face, making the reading easier; the new scale, reading the normal amount of corpuscles in the blood as one hundred per cent.; and the fact that by it the blood could be used in its normal condition direct from the circulation without dilution.

A Short-circuiting Commutator.—DR. W. P. LOMBARD, of Johns Hopkins University, showed an ingenious and very simple short-circuiting commutator, affording, making, or breaking induction shocks.

It consisted of two hard-rubber wheels or disks, set on a brass shaft, and having in the circumference of each a brass plate connecting by contact with the shaft. One of these wheels rotates on the shaft. Against these wheels the usual brush rests, and by rotating one of the wheels upon the shaft the current of the short circuit can be made to precede, or follow, the primary current at will.

The device can easily be attached to any apparatus.

Dr. Lombard also showed an improved hand-rest for use with the ergograph, whereby the usual variations caused by the unconscious and involuntary withdrawal of the hand and arm from the ordinary hand-rest, and the use of other muscles than the particular one desired, can be avoided.

He also showed a "non-oxidizable mercury key," consisting of a hermetically sealed "U" tube in two parts, a segment of rubber tubing connecting the two parts; the tube is partly filled with mercury, the balance being filled with nitrogen (for which may be substituted hydrogen or other non-oxidizing gas), no air being in contact with the surface of the mercury; into each end of the tube is soldered a platinum wire; and pressure on the rubber segment of the apparatus causes the column of mercury to come into contact with the wire at one end of the tube, thus completing the circuit; on relaxation of the pressure on the rubber tube the mercury falls of its own weight away from the wire, thus breaking the circuit.

Anæsthesia by Cerebral Pressure.—DR. G. T. KEMP, of Johns Hopkins University, read a paper on this subject. Of the various methods for producing pressure, *e.g.*, injections into the subdural space, direct pressure after trephining with blunt instruments, the air-bag, etc., he used a thin rubber bag inserted through a cannula, which is put into a trephine hole, and distended this with salt solution.

His object was to find if the production of anæsthesia was practical and practicable, especially when anæsthesia by other means was contra-indicated, as in long-continued laboratory experiments on animals, or where it was desirable to avoid, in any particular experiment, the effects, other than anæsthesia, produced by the drugs ordinarily used for that purpose.

He used chloroform for the primary operation of trephining and applying the pressure apparatus, then allowing the effects of the chloroform to pass off, noted the effects of the cerebral pressure. The effects of slight pressure were pain and stimulation, especially of the medullary centres.

All these centres were stimulated early, and this was followed by exhaustion, and later still by paralysis. The vagus centres responded first, and respiratory centres became exhausted first. He found that it was the automaticity of the centres that was exhausted, and not the centres themselves; as after the suspension of their automatic action they still responded promptly and vigorously to any direct stimulation. He found that he could not use pressure enough to cause complete anæsthesia without doing some damage to the medullary centres, this fact being probably due to the anæmia of the medulla caused by the pressure.

He concluded, however, that for many experiments it was a means of causing anæsthesia that was of great practical value for laboratory work.

He exhibited a number of beautiful tracings showing the results in several experiments, some of them of several hours' duration, with the curves of the respiration, blood pressure, and the artificial cerebral pressure.

Respiratory Paths in the Cord.—DR. W. T. PORTER presented a paper with this title. He noted Rosenthal's work on the automatism of the respiratory centre, and the fact that the exact location of the centre had not yet been determined. He showed, however, by the fact that, although some irregular movements of the diaphragm take place after separation of the cord from the medulla, no full, regular, respiratory movements occur, that there is no automatism in the cord so far as respiration is concerned.

He then detailed many experiments made to trace the path or paths of respiratory impulses from the centre through the cord.

His first experiment was to make a hemi-section of the cord on one side at the level of the second cervical vertebra; then a hemi-section on the other side at the level of the point of the calamus scriptorius, of all excepting a very small portion of the outer part of the lateral tract.

Breathing stopped at once, but after a few minutes of artificial respiration the breathing began again and continued.

Later the remainder of the lateral tract was cut, and then breathing stopped again and could not be restored by artificial respiration, showing that the respiratory impulses descend in the lateral tracts, and that they do not cross between the two points above mentioned, at which the sections were made.

Dr. Porter detailed many more experiments similarly carefully made; and as to the place of crossing, suggested in general three possible solutions, viz., the crossing occurs between the bulb and the phrenic centre, or at the level of the phrenic centre, or by no definite path, but diffusely, anywhere.

From his experiments, which were too great in number to give in detail, he deduced the conclusion that the respiratory impulses pass down the cord through the outer part of the lateral tracts; that they can and do cross on their way down without dyspnœa; that they do not cross diffusely in any and all parts of the cord; that they do not cross between the level of the bulb and that of the phrenic nuclei; that they do cross at or about the level of the phrenic nuclei, viz., in the region of the fourth cervical vertebra.

He further suggests the following interesting hypothesis: That the fibres descending in the lateral tracts and

transmitting the respiratory impulses end at the level of the phrenic nuclei in arborizations; that each phrenic motor cell has two sets, or two sorts, of branches, the axis cylinder and the protoplasmic or dendritic processes; that the latter have two distributions, some, the greater part, end on the same side, the others cross to the other side of the cord, and both come into contact with the end arborizations of the fibres from the respiratory centres. Thus the end arborizations of each respiratory fibre are in contact with phrenic cells of both sides. That ordinarily the impulses will follow the path where there are the greater number of processes or dendrites; but that if this part be disturbed or obstructed or cut off, they then can take the other one; crossing to the other side of the cord and following down the phrenic of that side.

Dr. Porter claims that the only point of this hypothesis which does not rest upon established anatomical, histological, and physiological facts, is the relation of transmission to the number of dendrites.

Action of Strychnine on the Cord.—Dr. A. R. Cushing read a paper with the title "Some Facts Bearing on the Action of Strychnine on the Spinal Cord."

He claimed that there is a coincident paralysis and stimulation of strychnine-poisoning.

His method of procedure was to expose only a part of the cord to the action of strychnine at a time.

He first applied strychnine about the branches of the brachial plexus. The usual tetanic condition resulted; but he found that, although if the upper extremities or upper part of the body were touched the usual tetanic spasm followed; if only the lower limbs were irritated there was no response at all, or only a feeble one.

After a few minutes he could obtain the full results from touching the lower limbs, owing to the fact that the strychnine had spread down the cord. When the reverse experiment was tried, *i.e.*, the lower part of cord exposed to strychnine, the upper part being protected, the results were similar; *i.e.*, a full response from irritation of lower extremities and none from the upper, until after some time had elapsed, and the strychnine had diffused through the whole cord. He concluded that in order to produce strychnine tetanus it was not necessary to apply strychnine to the motor cell itself; that strychnine acts chiefly upon sensory cells; and that the chief resistance to strychnine lies in the sensory cells.

The Society then adjourned, to meet in Baltimore in December of this year.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held in Washington, D. C., May 30, 31, and June 1, 1894.

(Continued from page 24.)

SECOND DAY, THURSDAY, MAY 31ST.

Results of Cutting Operations in the Nasal Septum was the first paper of the session. Dr. Thomas R. French, of Brooklyn, directed especial attention to perforation of the septum and membranous adhesions occurring as a result of operations on the nasal septum.

In reperforation he said that as the methods generally employed to correct deviation of the septum were not always successful, he wished to present for discussion a question which had often arisen in his mind, viz.: If a successful result cannot be obtained in any other way, are there not conditions under which perforation of the cartilaginous septum can be made a perfectly justifiable procedure?

From his study of the result of perforation made by others, and from his own and other experiences with perforations with unhealed edges, he expresses his belief that, with proper care in the after-treatment, perforation can be deliberately made without injury and with great relief in a certain class of cases; that if the breath-way through the obstructed side cannot be obtained without leaving a hole in the septum, such a procedure is justifiable if the patient can be impressed with the necessity of leaving the parts alone, and it is reasonably certain that the case can be carefully followed until healing of the edges has occurred; otherwise it is an unjustifiable method of operating.

He, however, excepts from that statement the perforations made near the entrance of the nostrils, particularly in a septum bent obliquely across both openings, by the Blandin punch.

In re membranous adhesions, after reviewing the recognized causes of this annoying sequel of operations within the nasal passages, the author called attention to a cause, heretofore overlooked, viz., that cut surfaces on the septum will become adherent to scar-tissue on the turbinates made by the galvano-cautery at some previous time. Therefore, in patients who present for treatment whose nares have never been subjected to operative procedures, and in whom there is need of the destruction of turbinated tissue and removal of obstructing cartilage or bone, the septum should be operated upon first, when, after a month or more has elapsed, and it is certain that the mucous membrane is completely reformed, the turbinates can be safely destroyed by any method. When, however, patients object to a cutting operation on the septum, but are willing to submit to the destruction or removal of turbinated hypertrophy, preference should be given to the use of the snare or acids in order to avoid the possibility of leaving a surface which might become adherent to a wound opposite in the event of a cutting operation on the septum being performed later.

Without doubt adhesions are frequently occasioned by saws with unprotected ends, and the unskilful use of trephines and cutting forceps in narrow passages. A distinct advance will be made when all instruments used for septal operations are constructed with a view to preventing the possibility of wounding the outer wall of the nose.

It is a good rule, in operating with the saw, to begin the section by cutting upward, and finish it by cutting downward. But whether it is begun from above or below, the section should be finished by a cut from the opposite direction; for in this way the maximum amount of tissue can be removed from the septum with the least danger of injury being done to the outer wall.

Dr. J. H. Bosworth, of New York, said that he had been credited with having said that he had only had one perforation of the septum from the use of the saw. What he did say, however, was that, up to the completion of his first 169 cases he had had only one perforation, but had had many since. A perforation in the antero posterior direction is practically harmless; but if it is so shaped that it presents a projecting edge or angle to the current of air, it is harmful.

Dr. John O. Roe, of Rochester, did not believe that with perforations in adults there was danger of a falling in of the nose, but there is a real danger thereof in children. Perforation from operation is bad surgery. We cut through what we should cut away. He believed that the septal forceps devised by him would prevent this accident, as, by means of a screw in its handle limiting the approximation of the blades, this was prevented. The intact mucous membrane on the non-diseased side acts as a splint to help support the septal fragments till healing occurs.

Dr. William H. Daly, of Pittsburg, said that perforation should be mentioned only to be condemned. These cases don't stay cured. Many minor factors may conduce to septal deviation, such as lying on one side, the use of the handkerchief, etc. He had had poor results from Roberts's "pin operation."

Dr. C. M. Shields thought that the thickening found in these cases was nature's protection against further bending. Removal relieves the symptoms, but nature reproduces the deformity. He prefers the knife as the *puret communites*. He makes parallel antero-posterior incisions above the line of deflection and joins them by a perpendicular cut over the salient angle. He has seen perforation result therefrom.

Dr. W. E. Casselberry, of Chicago, would object to

perforation on æsthetic grounds. We need not worry where the condition results from accident. He could not accept Dr. French's view, that adhesions result only where there is a solution of continuity on both of the opposing surfaces. Naso pharyngeal tumors often form adhesions from mere pressure on surrounding surfaces. Furthermore, as to hemorrhage from the septum: it does come at times from the cut surfaces, and not from injuries to the turbinated bones.

Dr. M. J. Asch alluded to the operation devised by him and presented to the association a few years ago. Few failures had resulted therefrom.

Dr. J. W. Gleitsman, of New York, said that the failure to relieve the symptoms in many of these cases arose from the fact that, back of the septal deformity, there is frequently an enlargement of the inferior turbinates. The latter may swell up in the air, rarefied by the septal obstruction.

Dr. S. W. Langmaid, of Boston, asserted that our operations ought to leave the patient in better condition than the one in which we found him. Adhesions have frequently resulted from caustics, which produced corrosive action, followed by granulation-tissue. Operation should never be undertaken unless we can keep a careful watch on the patient until healing has occurred.

Dr. W. Peyer Porcher, of Charleston, had seen severe hemorrhage follow the breaking up of adhesions. He thought iodoform gauze incomparably the best material for tamponing in these cases.

Dr. M. R. Brown, of Chicago, believed that bleeding in septal operations sometimes came from an injured turbinate; not always, however, as the septum may bleed furiously. He has never found it necessary to perforate the septum intentionally but twice, and did it far back from the concave to the convex side.

Early Operation in the Diseases of the Antrum of Highmore.—Dr. W. H. Daly, of Pittsburg, advocated an exploratory opening for purposes of diagnosis, and had treated twenty-seven cases since 1882. It was possible to teach the patients to irrigate the sinuses by taking water into the mouth, and then, by a sort of bucco-lingual compression, force the fluid through the opening into the antrum, so that it would rinse out the latter and escape through the nose. As the proper site for opening, he advocates a point just above the second bicuspid tooth of the size of a small goose quill. Davidson's syringe, with a small tube nozzle of proper curve, makes the best irrigator. Partitions in the antrum should be broken down. A conical burr-head drill makes the best perforator.

After operations constitutional symptoms may develop. Pain in these cases is often referred to a point above the eye. In regard to the site of operation, he finds in many instances a resiliency of the antrum wall just at this point. The cheek will cover the opening, but not always prevent the entrance of particles of food.

Dr. A. W. de Roaldes, of New Orleans, said that he had found but little difficulty in washing out the antrum through the natural opening. If an artificial one was necessary, it should be relatively large.

Dr. Brown preferred to make the opening low down between the roots of the teeth, and thus go through a portion of the alveolus itself. Thereby we enter the antrum through the floor. We may enlarge the opening, if necessary. We should remove the drainage-tube early, as its prolonged use keeps up the discharge. Irrigation through the natural opening is feasible, but tiresome.

Dr. J. H. Bryan, of Washington, made a plea for conservative surgery on this cavity. A diagnostic opening could be made through the middle or inferior meatus, according to the method of Moritz Schmidt. Duration of the case depends on its past history. For irrigation only the mildest solutions should be used.

Dr. Schields had often found that the discharge would cease after the tube was removed. The opening will always close up when the patient is syphilitic.

Dr. Casselberry believed that antrum disease rarely exists alone. Other cavities are also affected at the same time. These latter suppurate, and so prolong the case. Hence, even drainage of the maxillary sinus can never cure these cases. The pain above the eye, mentioned by Dr. Daly, may come from coexisting disease.

Follicular Odontoma Invading the Antrum of Highmore.—Dr. A. W. de Roaldes, of New Orleans, read a paper, entitled "A Case of Compound Follicular Odontoma Invading the Right Antrum of Highmore and Obstructing the Corresponding Nasal Fossa, with a New Apparatus for Administering Anæsthetics, especially Adapted to Operations on the Mouth, Nose, and Throat." He said that cases of that kind were so rare, and our American literature so barren on this topic, that every one deserved to be made public.

The condensed history of the case is as follows:

Young Daniel A——, an otherwise healthy boy, aged nine, was first seen by Drs. Guice and Rembert, of Natchez, in July, 1892. His right upper jaw presented two points of disease—one a fibrous growth occupying the socket of the central incisor tooth, and the other a hard osseous tumor, covering a considerable portion of the palatal bone back of the missing canine tooth, extending posteriorly alongside the internal plate of the alveoli to near the tuberosity of the maxilla. Both growths were removed, but in the spring of 1893 the osseous tumor had returned, when it was operated upon again during the summer. A short while after necrosis of the bone was found at the seat of operation, and the antrum was found exposed.

When examined by Dr. de Roaldes, a hard bony tumor was found occupying the right cheek, depressing the vault of the palate, and encroaching upon the right nasal fossa, fused with the alveolar border, especially at a point corresponding with the missing canine tooth.

A diagnosis of benign neoplasm was made, probably an osteoma, but with a possibility of an odontoma; this recorded point to be cleared by previous history, as to eruption of teeth, which history was unobtainable at the time. A radical surgical procedure was advised, and was performed March 4, 1894, by a modified Vollet's operation; the whole anterior wall of the antrum was removed from nose to tuberosity, from alveolar border to orbital floor, and main mass of obstructed growth chiselled out from place corresponding to canine fossa. On its surface were tufts of hard adherent tissue; a large number of smaller masses, to the number of fifty or more, some of them tooth shaped, were gouged out in all directions. After thorough curettage, cavity was packed, parts nicely sutured and bandaged. Patient made rapid recovery, and returned home March 23d; and, twelve weeks after, cavity is two-thirds filled, and photographs show scarcely any disfigurement. Microscopical examination, made by Dr. Borden, U. S. A., shows tumor to consist, as shown in micro-photograph and drawing of pathological specimen presented, of hypertrophic tooth capsule, which ossified sporadically in places, producing a number of denticles (50), which had originally probably all been bound together by periosteum, the denticles being embedded in the fibro-vascular structure, much as plums are in a plum pudding. The denticles consist entirely of cementum, and the origin of the tumor was connected with the unerupted canine tooth. No dentine or enamel tissue could be found in the specimen. The case, a very interesting one, resembles closely those of Sims, Bellander, and Mathias, figured in Sutton's work.

The points of interest brought out by the case reported by Dr. de Roaldes, and on which he insisted, were: 1. The rare character of the tumor, which contained, as far as he knows, the largest number of denticles. 2. Its very uncommon origin in an unerupted canine tooth. 3. Its location in the upper maxilla, and, as the above-mentioned cases, on the right side. 4. Its coexistence at one time with another fibrous tumor developed in the alveola of the right upper central incisor, probably itself a fibrous odontoma. 5. The fact that odontomata have often been taken for exostoses, fibroid tumors, etc. 6. The difficulty of the diagnosis, especially when growth is

embedded in the maxilla. The consideration of the duration of the disease, the age of the patient, and especially the absence of one or more teeth, will help to ensure a precise diagnosis. 7. The propriety of avoiding in those cases dangerous operations, as has been often done, in removing the maxilla, when proper chiselling and enucleation will generally suffice.

Dr. A. W. de Roaldes concluded by presenting, in the name of Professor Souchon, a new apparatus, devised by him for administering anæsthetics, and which had been of great service in the present case.

Cockle-Burr in the Larynx.—Dr. Charles M. Shields, of Richmond, reported an extraction of a cockle-burr from the larynx. The patient, a farmer from Halifax Co., Va., had observed one of his hogs being chased by some dogs. He rode after them until the bushes prevented farther pursuit on horseback, and, dismounting, he continued the chase on foot. This exertion made him breathe rapidly through the mouth, and he was suddenly stopped by feeling that he had drawn something into his throat that prevented easy breathing.

The foreign body was found to be a burr lying in the glottic space at its anterior commissure and just at the lower level of the cords. Its long axis was lying anteroposteriorly, and it was fastened firmly in position by the closing of the glottis on its spurs. It had been grasped just in the act of passing through. The patient had a most sensitive throat, and manipulation was thereby rendered more difficult. After being sprayed with cocaine, Mackenzie's and other forceps, opening laterally, were repeatedly tried without success, because of the inability of getting the blades between the burr and the bands on either side to which it was so closely adherent. Then a wire loop through a curved cannula was likewise unsuccessfully tried, the rapidly contracting vocal bands flattening the loop. Cotton twisted on a curved probe, with the hope of engaging the prickles in its meshes, met with no better success, and a curved blunt curette passed below the burr failed to extract it on being withdrawn.

Just before doing a tracheotomy, which had now been decided on, Schrötter tube forceps were again tried. This time, after pushing them between the cords closed, they were forcibly opened as the cords tightened on them, and, being drawn forward, the blades slipped over the burr, which was withdrawn entire.

Laryngeal Neoplasms.—Dr. Charles H. Knight, of New York, reported three cases of this nature:

Case I. *Diffuse Subglottic Myxoma.*—Partial removal by the mouth with Mackenzie's forceps. Tracheotomy under cocaine and radical extirpation of the growth through the wound. Recovery without a bad symptom. No recurrence.

Case II. *Papilloma of the Larynx.*—Removal with Mackenzie's and the Schrötter Türck forceps. Electric cauterization of the base of a growth attached beneath the right vocal band. Restoration of voice within three weeks, complete aphonia having existed for nearly eight months.

Case III. *Multiple Papilloma of the Larynx.*—Removal with Mackenzie's forceps. Recurrence and removal in twelve months. Second recurrence and removal in a similar way five years later.

Dr. Arthur O. Bliss, of Philadelphia, reported two cases of malignant tumors of the larynx.

Case I. *Squamous Epithelioma of the Larynx.*—Patient, male, aged forty-six, with negative previous history. Had been growing hoarse the past two years. Had gradually increasing difficulty in respiration and enlarged glands. Refused radical operation. Trachea opened through two upper rings. Heart sounds suggested atheroma. Considerable albuminuria, but no casts. At the end of the primary anæsthesia (ether) during the operation, a severe glottic spasm resulted. This might have been due to accumulation of secretion. After operation, was very weak for a month, suffered much from angina pectoris, and died suddenly from latter disease. Specimen was shown. During life the left arytenoid cartilage and vocal band were so swollen that subjacent cord could not be seen. The right cord was forced into semi-abductor. There was no odynphagia. Autopsy also showed chronic nephritis, fatty heart muscle, and thickened pericardium.

Case II. *Small Round Celled Sarcoma of Larynx.*—Patient, male, aged fifty-three. Symptoms practically as in Case I. Pharynx was normal. The epiglottis was a fungoid mass. No laryngitis was observed. The right arytenoid was swollen and œdematous. There was swelling in the supra thyroid region, but none over the thyroid. High tracheotomy was done, as the patient refused radical operation. Died in one year from exhaustion. Both of these cases would have been favorable ones for partial laryngectomy.

Laryngectomy by a New Method.—Dr. Henry L. Swain, of New Haven, Ct, reported a case of laryngectomy performed on a German, aged forty two, who had an epithelioma which had followed on a simple fibroma of the right vocal cord, the latter having been known to have existed for a year previous.

The epithelioma waxed great and filled the entire larynx, so much so that tracheotomy was done under cocaine March 5th. March 18th the larynx was removed by Dr. W. H. Carmalt. Incision was made from the thyroid bone to sternum. A low tracheal opening was made, and a sponge Trendelenburg cannula introduced. Cross-incision made at top of wound to sterno-cleido mastoid muscles on either side. The larynx was then laid bare, and, bleeding being checked, a bistoury was inserted back of larynx between it and trachea. The trachea being liberated by a cut from a strong bistoury, the larynx was hooked up, and dissection begun from below upward. The anterior wall of œsophagus was carefully preserved until the arytenoid cartilages were reached. A cross cut was then begun, preserving a part of the mucous membrane of arytenoids and ary-epiglottic folds. The epiglottis was then cut across, its larynx freed, removed, and all bleeding checked. The epiglottis was then sewed on to the anterior wall of œsophagus, thus closing in the pharyngeal cavity and cutting off all communication from the wound in neck. Subsequently the wound in neck was sewed up tight, except enough of the lower part of median incision to allow of taking in the upper rings of the trachea, which latter were sewed into connection with skin flap, making a circular opening turned upward and forward. The wound was dressed with plain dry dressing. No tube left in trachea. Patient stood operation beautifully, although it lasted two or three hours.

The subsequent healing of wound followed without adventure, save a large stitch abscess above and back of trachea, which healed in a few days. Temperature got to 101° F. the second day, and then went down to normal or nearly so and remained. The internal wound at base of epiglottis was observed to heal by first intention and patient could swallow water from the first, could take fluid nourishment at the end of a week and regular hospital diet at end of second week. Internal and external wounds are both in healthy condition. Patient could make no audible sounds at first; later, hissing consonants were to be perceived, and now the briefest sentences and single words can be distinctly understood with the back turned, so that lip reading is eliminated. There is nothing more than a whisper to the voice, but it has gained so much of late in strength as to promise more.

Patient's condition at present prime, he working at his trade of a carpenter, wearing most of the time a tube in trachea.

Third Day, Friday, June 1st.

Exudative Pharyngitis.—Dr. W. C. Glasgow, of St. Louis, Mo., related the history of a child, aged ten months, large and robust, who took cold and had an otalgia without fever. Two days later, coryza came on and the temperature rose to 104° F., with morning remissions.

Its course was very irregular, like the fever of a septic process. Mucus poured from the nose in torrents, blistering the nostrils and also the skin wherever it touched the latter. It was so abundant that cloths had to be placed around the nose to take it up. The excoriations soon became covered with a whitish pellicle. There was also the same secretion from the fauces, where, on tonsils, uvula, soft palate, and pharynx, the exudate appeared. There was none in the nose. The patches were white, elevated, and left no raw surface on removal. They looked like blisters containing solid albumin. The exudation on the uvula was probably due to mechanical causes. There was prolonged aphonia and urgent dyspnœa with dysphagia. Fluids returned through the nose. The skin lesions were like those on the membranes, but the edges were raised. Adenopathies were wanting. The secretion was intensely alkaline. For treatment, sodium salicylate salve, and brandy were given internally, while locally peroxide of hydrogen was used. Aristol served well as a dressing for the skin lesions. A suppurative otitis occurred as a sequel. The whole duration of the case was three weeks. The secretion contained streptococci in large numbers, but no Loeffler bacilli. Dr. Glascow regarded the case as one of the protean forms of influenza.

Dr. Jonathan Wright, of Brooklyn, thought that, as streptococci were so very common, it was difficult to prove their causative relation in this present case. He had not found in the Eastern cities such exudative forms of influenza as had been reported from the West.

Dr. Glasgow replied that he had seen cases from Eastern cities. He had found benzoate of soda most helpful in all cases of solid œdema occurring in the course of influenza.

Singer's Nodes.—Dr. F. I. Knight, of Boston, spoke of the little nodule, as large as a millet seed, or larger, appearing on one or both vocal cords at about the junction of the middle and anterior third, after strain of the voice by prolonged use or wrong vocal methods.

This manifestation should be considered clinically as a separate entity, although pathologically, as far as examinations hitherto made have shown, the nodule is of the same nature as those occurring in the diffuse form, to which the term trachoma, sometimes applied to the single nodule, should be restricted.

Whether the term chorditis tuberosa, which has also unfortunately been applied to the diffuse form as well as the single nodule, should be retained for the latter is doubtful, as often there is no general chorditis; but if it is, its use should be restricted to the single nodule.

In regard to treatment, Dr. Knight said that in the cases he had met with up to this time, by rest, and astringents if there was also inflammation of the surrounding mucous membrane, the voice had been so far restored that he did not feel justified in risking cutting operations; but if, after this treatment, there should be in any case still no useful voice he should not hesitate to employ Dr. Rice's guillotine and remove the protruding portion of the growth if it could be engaged, hoping that the remainder would be more readily absorbed.

Dr. Knight said that he had been unable to learn the ultimate condition of the singing voice in any of the cases where an operation had been performed, and hoped that the discussion might furnish some facts in this regard.

Dr. J. W. Gleitsman had used the galvano-cautery in these conditions and had been well satisfied with the result. He also advocated chromic and trichloracetic acids.

Dr. S. W. Langmaid, of Boston, looked upon the condition as a circumscribed definite tumor. He had seen one case more posteriorly than those described by Dr. Knight. They generally occur in women and do well unless chorditis ensues The nodule is not vascular and is often the result of a previous chorditis. He had seen six or eight cases in all. He expressed some doubt as to the causative relation of a wrong vocal method, for these nodules are seen in singers who are able to satisfy the artistic demands of a critical public and consequently do sing well. The voice often improves sufficiently to serve for the dramatic stage, though its finer singing qualities may be permanently lost. Surgical procedures would not necessarily impair the voice unless much injury was done to the edge of the cord. Curetting might suffice.

Dr. Porcher asked if Dr. Knight thought that these nodes ever developed into papillomata; Dr. Knight responded in the negative.

Dr. Murray had seen four cases. One at Stoerck's clinic was treated with solid silver stick and steam inhalations with a perfect result. The node disappeared entirely. One case was in a boy seven years of age, also a singer.

Dr. Wright had presented the history of a case before the New York Academy of Medicine and asked if its members present believed that there was any relation between the condition and tuberculosis. If such existed it might be from dyscrasia or direct irritation from the lung lesion.

Dr. Swain had treated one case with silver nitrate. The cord looked fairly well except at one point, but the voice had not improved.

Dr. John N. Mackenzie had cured one case of the tuberous variety with lactic acid in concentrated solution.

Dr. T. R. French spoke of a case illustrating the value of long-continued treatment The woman had greatly overused her voice and several nodules were visible. One case looked as if the cord had been subjected to violence. He believed that surgical measures were contra-indicated. In the first case mentioned, local treatment had been continued three times a week for over two years and a half, weak astringents being used. The voice is now completely restored, though she tires more easily than before. The edges of the cords look perfectly straight but are a little thickened on one side. He did not believe in the association of the condition with tuberculosis.

Dr. W. K. Simpson, of New York, thought that the cause lay rather in the over-use of the voice than in a wrong vocal method. The nodules might come from laryngitis or from hemorrhage in the cords, the bleeding resulting from over-use and leading up to nodule formation. In one instance a linear hemorrhage on the under side of the cord came up into the middle line and was clearly seen where high notes were sounded by the patient.

Dr. Delavan did not believe in the association with tuberculosis. The existence of the two conditions is of course possible. Nodules sometimes appear in acute laryngitis, but the relation of these to the chronic variety is unknown.

Sarcoma of the Tonsil.—Dr. A. W. Watson, of Philadelphia, reported a case of a woman aged fifty-three who was well till last Christmas. Had a severe sore throat, probably a quinsy, discharging a little pus without relief. Severe pain continued, running to the ear. There was moderate swelling of the left tonsil and of the anterior faucial pillar, which was adherent. With this exception, there was no infiltration of surrounding structures. Considerable pain on swallowing was present.

One small gland was enlarged at the angle of the jaw, and engorged capillaries were seen at the surface of the tonsils. Medicine did no good. A deep incision was followed by free bleeding, but revealed no pus. A piece of the tonsil removed for examination showed the view characteristic of round-celled sarcoma.

Six weeks later, under cocaine, the tonsil, held out by vulsellum forceps, was, along with its adherent pillar, removed by successive short strokes with the galvano-cautery knife. Three weeks after, pain in the ear had nearly gone and the adenopathy had disappeared. There was no odynphagia. The peculiar features of the case were the sudden onset and the presence of so much pain and

dysphagia in view of the lack of infiltration of surrounding structures.

Importance of an Early Diagnosis of Malignant Tumors of the Throat.—Dr. J. W. Gleitsman, of New York, read a paper with this title. The author stated that he did not desire to ventilate the question of the possibility of an operation, in cases so far advanced that the decision had to be left to the patient as to whether he would prefer to slowly die after a tracheotomy, or to take the risk of a probable death by any attempt at removal.

At the present time there are three methods of procedure which have resulted in a certain number of cures. The endolaryngeal operation allows of temporary removal, but at times effects a lasting cure. If patients only come under observation early enough this method should be resorted to more frequently than it is. The first operation done in this way for epithelioma of the vocal cords was done by Schmitzler, in 1867, with no recurrence twenty years later. Reference was made by the writer to several other similar cases which are recorded in the recent literature of laryngology.

A possible relief is promised by the method elaborated by Coley, of treating these tumors by inoculations of erysipelas or of its toxic products obtained by the cold process.[1] One of Coley's patients had sarcoma of the tonsil which, under the erysipelas treatment, diminished considerably in size and had not increased after two years. Reference was also made to the use of methyl blue in cancerous tumors. In these latter, internal medication with this agent has given better results than its local application.

Regarding modern surgery the larynx and pharynx can be considered as analogous to the breast and uterus. But conversation with our leading surgeons elicits the fact that by far too large a number of cases are seen by competent men only when the patients have reached a stage when an operation is either impossible or extremely hazardous. Excepting trauma and sepsis, delay in operating is the most potent factor for bad results in surgery. Early diagnosis is indeed often difficult; but when once made, delay is both unjustifiable and unpardonable. It is better to avoid the use of the word "cancer" in our necessary conversation with our patients.

As to the operation itself, the case generally goes for this purpose into the hands of the general surgeon; and the laryngologist, therefore, cannot be accused, by his advocacy of operative measures, of selfish motives. Each case must be decided on its own merits—as to whether we shall do a tracheotomy only, or extirpate the larynx *in toto*, or do a modified laryngectomy after Cohen's method. Preniazek, a Russian surgeon, has had thirty-seven cases of laryngo fissure with the head hanging down, and has had only two deaths—one from diphtheria and the other from tuberculosis.

Of thirteen cases under Dr. Gleitsman's own observation the pharynx was involved in six, and the larynx in seven. Of the former four were cancer and two sarcoma (tonsil). Of the latter, six were cancer and one alveolar sarcoma. One case of pharyngeal cancer was operated upon three months ago and feels well now. The others died. Of the two tonsillar sarcomas one was inoperable, the other lived two years without recurrence after removal, but died by suicide. Of the seven laryngeal cases the six cancerous patients are dead and the sarcomatous case is living without known recurrence. Laryngo-fissure, with removal of the diseased tissue, was done twice; unilateral as well as total extirpation, each twice; tracheotomy alone, once. Death resulted twice from shock, twice from pneumonia (second and third). Only one had a recurrence after six months, and died from exhaustion. One with total laryngectomy did well for several months, but died of an intercurrent appendicitis.

In the discussion on the two preceding papers, Dr. Wright spoke of the difficulty in making an early diagnosis in such cases, even with the aid of the microscope, until the clinical features were well developed. He expressed a polite scepticism as to the accuracy of Coley's results. Some people seem to be immune against streptococcus infection. The paper was still further discussed by Drs. Swain, Simpson, Langmaid, and Casselberry.

Neurasthenic Throats.—Dr. W. Peyer Porcher, of Charleston, spoke of the intimate relations between the throat and the lungs, and how lesions in one place might excite symptoms in the other. Among the most common symptoms of neurasthenic throats were reflex cough, aphonia, and a spastic condition of the laryngeal muscles. Many of these cases seem to form the base of a subsequent phthisis. Illustrative cases are quoted to emphasize the main points of the paper.

Carbolic Acid in Cysts of the Larynx.—Dr. E. Fletcher Ingals, of Chicago, forwarded a paper on this subject. A case of cyst of the larynx occurred in a man, forty-three years of age, who had experienced some trouble with his throat for about two years, but had been annoyed by soreness for only a month, though there had been considerable cough for the previous seven months.

When he first presented himself there was hoarseness and continuous burning pain in the throat. One brother had died of consumption, but there was nothing in the patient's personal or hereditary history which seemed to account for his symptoms. His general health was good; weight normal; temperature and pulse, normal; he had a deep, loose cough, and expectorated about half an ounce of muco-pus daily, which subsequently appeared to be the result of a subacute laryngo-tracheitis and bronchitis. There were no abnormal physical signs over the chest, but an examination of the larynx revealed a large swelling of the left ventricular band and aryepiglottic fold, measuring about one and one-half by one centimetre, antero posterior and lateral diameters. The surface of this was uniform and smooth; the mucous membrane over it slightly congested, and the whole had the appearance of a solid tumor. After a preliminary treatment with resolvents, it was determined to inject the tumor with lactic acid. From ten to thirty minims of a thirty per cent. solution of this medicine were injected deep into the growth, three or four times, at intervals of two or three days. As the needle passed in, it had the feeling of passing through four or five millimetres of firm, soft tissue into a cavity. A laryngeal lancet was subsequently used, and a small amount of thick, semi-transparent, grayish fluid escaped, which caused some diminution in the size of the tumor; the contents, however, soon reaccumulated, and it was found that the injections of lactic acid had no influence upon the size of the growth. It was then determined to use deep injections of carbolic acid, which was employed in solutions in glycerine and water of from eight to ten per cent. of the acid, from fifteen to twenty minims being used at each injection, and the injections repeated once in from five to seven days. These injections were repeated eight times in all, twenty minims of the ten per cent. solution being used each of the last six times. At the end of this time the tumor had nearly disappeared, and the injections were discontinued with the belief that the cyst had been obliterated. The patient was subsequently seen at intervals of three or four weeks for three months after the last injection, and there had been no return of the growth. The patient felt that his throat was perfectly well, and it presented the appearance of a normal larynx.

The especial points of interest in the case consisted of the deeply seated position of the cyst, and the impossibility of removing it without removing a large part of one side of the larynx. Its walls were so thick that crushing, tearing, or cutting operations were out of the question.

Mycosis of the Pharynx and Tonsils.—Dr. Ingals reported twelve cases of mycosis of the pharynx and tonsil in order to place the histories on record. They offered nothing specially new, but illustrated the great

[1] See American Journal of Medical Sciences, May, 1893; also Post-Graduate, August, 1893.

superiority of cauterization with the galvano-cautery over other methods of treatment.

Four of the cases received practically no treatment. The other eight were treated by cauterizations with the galvano-cautery, and all were cured; in none has recurrence occurred so far as the author could determine.

An analysis showed that in fifty-eight per cent. the patient had for many years suffered more or less from sore throat, and in sixty six per cent. soreness of the throat had been present from four to eight weeks immediately preceding the discovery of the mycosis. Symptoms of dyspepsia were present in three cases, or twenty-five per cent., but in fifty per cent. of the cases it was distinctly stated that the patient was in general good health.

The plan followed in the treatment had been to burn off the growth and to pass an electrode, heated to a bright red heat, about one eighth of an inch into the tissue beneath it. Two or three patches were cauterized at each sitting, and the operation was repeated at intervals of about five days, according to the patient's convenience, two or three days being allowed to elapse between the disappearance of the soreness caused by one cauterization and the repetition of the operation.

The author believes that in some cases the disease had existed for many years before it was discovered; but in most of the patients he had seen it had apparently been of only a few weeks' duration. From his experience in two of the cases he believed that the disease might sometimes disappear under natural causes.

Etiology of Rheumatic Affections Due to Tonsillar Diseases.—Dr. H. L. Wagner, of San Francisco, forwarded a paper with this title: The tonsil has been justly termed by Gerhard a physiological wound—an inlet into the system guarded by leucocytes, which we have learned of late protect the body against the invasion of various micro organisms. If through inherited or acquired predisposition the energy of these leucocytes is diminished, or if the tonsil in a diseased state does not allow these corpuscles to migrate, then a soil may be given for infectious diseases, such as diphtheria, scarlatina, tonsillitis, follicularis, etc.

The sequences which sometimes follow these diseases are important to observe: paralysis of various parts of the body after diphtheria, and also articular rheumatic affections following follicular tonsillitis. The results gained by clinical studies and bacteriological investigations in follicular tonsillitis, followed by rheumatic affections, are what I particularly desire to refer to.

The question which presents itself is: Whether these rheumatic affections are produced by the germs (staphylococcus albus et aureus, Fraenkel's pneumococcus, etc.) migrating from the tonsillar tissues into other portions of the body, causing rheumatism—or whether they remain in or about the tonsils, sending forth and distributing their ptomaïnes or poisonous products into the system?

The result of my investigations, which I will give you in brief, show in follicular tonsillitis a migration of these germs, proving that rheumatism here is not caused directly by ptomaïnes.

Clinical observations show that the joints which are mostly in use are the ones generally affected; for instance, the ary-cartilages of the larynx of singers (5 cases), the knee-joints of shoe dealers—owing to the constant kneeling posture (2 cases), and the wrist joint of violinist (1 case), and bookkeepers (2 cases). Referring to the two cases above, where rheumatism of the knee-joint developed, the bacteriological investigation showed that the synovial fluid obtained by tapping of the joint contained the same micro-organisms as found in the diseased tonsil. I was also able to identify the same germs in the urine of nearly all the cases. The family and clinical history of all these patients showed no signs of rheumatism before the attack of this tonsillar disease.

Skulls of Cretins.—Dr. Harrison Allen, of Philadelphia, gave a demonstration on the skulls of cretins, showing the peculiar characteristics of this condition as influencing the size of the nasal chambers. The hard palate was shortened, the inferior meatus deepened, and in one instance the maxillary sinuses greatly enlarged. The skulls were from the Wistar Museum, at Philadelphia. He believed cretinism more common in America than is generally supposed.

Election of Officers.—At the executive session following the reading of papers, Dr. John O. Roe was elected president for the coming year. Rochester, N. Y., was selected as the place of meeting, the date to be determined by the council.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

HOSPITAL SUNDAY—INCORPORATED MEDICAL PRACTITIONERS' ASSOCIATION—DEFENCE—PROTECTION—BUSINESS AFFAIRS OF THE PROFESSION—SIR B. W. RICHARDSON'S MISTAKE—COUNTER PRACTICE—THE ANTIS AND THEIR FADS—EXPERIMENTS IN HOSPITALS.

London, June 9, 1894.

Hospital Sunday is again upon us, and to morrow most of the places of worship in London will resound with appeals to the benevolent on behalf of the suffering. *The Lancet*, always a warm supporter of this movement, has this year repeated its plan of publishing a special supplement in aid of the work, and one hundred and twenty-five thousand copies of an abstract of this supplement have been distributed to the ministers of the various congregations. This supplement was first issued in 1886, and has been regularly continued since.

The Practitioners' Association has been duly registered as a company limited by guarantee under the Companies' Acts, 1862 to 1890. Its name is now the Incorporated Medical Practitioners' Association, and its objects apparently those of protection societies generally, to which is added the promotion of various reforms. In pursuit of these laudable objects, a special issue of the *Medical Times and Hospital Gazette*, a vigorous little two-penny paper which is the descendant of the *Students' Journal*, and the organ of the Association, has been largely circulated, containing full particulars of what has been and will be attempted. Hospital abuses, remuneration of medical men, the question of nurses and midwives, and some law proceedings have occupied much of the attention of this Association, and there is no disposition to burke any of the burning questions that other bodies seem to neglect. This Association seems really to have had its birth in the House of Lords Committee on Hospital Management, and several of its members gave evidence before that committee on the abuses of out-patient departments.

I do not know if the Council of this newly incorporated body expect to rival the British Medical Association, but they certainly promise to do work which has hitherto been neglected. While they consider that existing organizations successfully cover the field of scientific work and progress, they say they intend to be above all things practical and to carry out schemes of direct utility to the members. The business affairs of the profession, are therefore to be added to the great objects of protection and defence. Accordingly they propose to appoint solicitors to work for members at reduced charges (catch the lawyers so far imitating the doctors!); to act as agents in life and fire insurance, and for the transfer of practices and to collect debts. The profits of this kind of business—which some will think incongruous—are to be added to the reserve fund. Committees of arbitration are also to be formed, which may be useful in settling disputes and preventing scandal. A defence committee would perhaps prevent some of the prosecutions that have too often been unjustly brought against medical men, and an ethical committee might very well warn practitioners who are guilty of unprofessional conduct. You will see that very

much of this programme is the neglected work of the British Medical Association, and might all be done by it. While it, however, ignores its duties and opportunities, it may be desirable to establish another organization. The British itself began in a small way, and it is impossible to predict how rapidly the young rival may grow.

One thing strikes me as a mistake: the little society with its little organ should have pitched its subscription at a figure in accordance with its size and actual position. It cannot all at once compete with a huge co operative journal society which has sacrificed so much professional honor for the sake of a great advertising connection.

Sir Benjamin Ward Richardson has "put his foot in it" with the general practitioners. He has actually proposed in his *Asclepiad* (occasionally pronounced as if sleepy-head) to legalize counter-prescribing by druggists. If there is one abuse more injurious to the profession and dangerous to the public than all others, surely it is this wide-spread encroachment of men in a province for which they are unfitted. Bad as it is to endure the competition of unauthorized and unqualified quacks of every kind, what would the consequence be of legalizing the practice of the great shop-keeping quack? Convert every dispenser into an authorized prescriber, and the "doctor's shop" would no longer be a phrase to laugh at. Ignorance would prescribe for all minor ailments a pennyworth of a drug or a shilling nostrum according to the willingness of the patient to disburse. This is certainly a solution of the problem of cheap dispensaries and out-patient abuse which no reformer has contemplated. I hope Sir Benjamin will have the courage to say he repents the rash proposal, which was no doubt dropped in a thoughtless moment—an error often committed by those who suffer from attacks of *cacœthes scribendi*. This is by no means the first blunder of Sir Benjamin's on medico-political matters, but he could hardly be betrayed into one more serious.

Mr. A. Arnold, whose chief distinction is perhaps his name, has been speaking in Piccadilly on vivisection, and said if such cruelty to animals were permissible because good results were obtained we might sanction the vivisection of malefactors and children. No doubt he knows the fallacy of his own foolish utterance, but anything is good enough for an audience if it will give a little notoriety.

Another cry—apparently got up by the crazy antis—is against experiments on patients in hospitals. It is rather too bad of these faddists to attack our hospitals on the eve of the Sunday collection. But we need not wonder, for so many falsehoods have been circulated by the anti this or the anti-that egotists, and vouched for by persons who ought to know better, that the most monstrous statements excite no surprise, although their repetition by some cheap newspapers is bringing disgrace on the editorial function.

OÖPHORECTOMY vs. ŌŌPHORECTOMY.

To the Editor of the Medical Record.

Sir: I have noticed of late, especially among gynecologists, a mispronunciation which violates all the rules of etymology, and is excessively offensive to the ear to anyone who remembers the origin of the word. The word I refer to is "oöphorectomy" which of course, as your readers well know, is derived from the Greek word ᾠόν, an egg, a word of two syllables and not of one. It would be just as excusable to pronounce "zoölogy" "zōōlogy," or "oölite," "ōōlite," as to unite the two o's in the pronunciation of oöphorectomy. The dictionaries, as your readers will find, all put the diæresis over the second "o," and I trust that our gynecological friends will be willing to introduce it into their pronunciation, and not offend the ear and the taste and violate the proprieties by such mispronunciation.

Very truly yours,

W. W. Keen.

Philadelphia, June 28, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 7, 1894.

	Cases.	Deaths.
Tuberculosis	58	102
Typhoid fever	9	2
Scarlet fever	52	11
Cerebro-spinal meningitis	0	2
Measles	61	8
Diphtheria	201	47
Small-pox	11	4
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

The Orloff-Davidoff Prize.—A prize of 10,000 rubles ($5,000) is offered by Count Orloff-Davidoff for the discovery of a certain cure or preventive of cattle plague. The efficacy of the remedy is to be proved by the same standard as those known to science as protective against small-pox, anthrax, etc. The award of the prize is in the hands of the Curator of the Imperial Institute of Experimental Medicine of St. Petersburg, acting on the advice of a committee of experts selected for the purpose. The competition is open to the whole world with the exception of active members of the above-named institute. The description of the proposed remedy must be clear and complete; it must be sent in, under the ordinary conditions as to concealment of the identity on the part of the author, on or before January 1, 1897. The award of the prize will be made on January 1, 1899. If no remedy satisfies the committee, a further competition will take place, and the award made on January 1, 1902. This may stimulate the search for the desired remedy, but it may also lead to the suppression of any such discovery, if made, until the award of the committee is announced.

Legislators Going to School.—The German Cultus Minister has, in response to repeated stimulation by a sanitarian deputy, consented to organize systematic courses of instruction in matters appertaining to public health for the special benefit of members of the German Legislature. Lectures are to be given by the professors of hygiene of the various German universities on the principles of hygiene. Probably, in the fear lest the legislators might not go to the lectures, it has been arranged that the lectures are to come to them, for they will be given within the precincts of the Legislative Chamber itself. The idea thus put forth is delightful, and it ought to be Americanized at once. If we could only have in Washington lectures on economics for the populists, lectures on statesmanship, money, and taxation for Republicans and Democrats, lectures on verbigeration and morals for all, it would greatly promote the usefulness of our law makers, and give an enormous impulse to the activity of our educators.

Cold Baths in Whooping cough.—Dr. Maurice Springer reports, in *L'Union Médicale* of June 2, 1894, a case of pertussis in a child aged one month, in which the sole treatment consisted in the giving of cold baths to which powdered mustard was added. The child recovered.

Living Anatomical Charts.—The British War Office is considering the advisability of instructing all soldiers in Her Majesty's service in the principles of first aid to the injured. Some genius has offered the startling and original suggestion that every soldier should have the leading arteries mapped out on his body by dotted lines tattooed in India ink, so that any of his companions may be able to arrest dangerous hemorrhage should he chance to be wounded.

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Original Articles.

FEEDING AFTER WEANING.[1]

BY WM. L. STOWELL, M.D.,

NEW YORK.

FEEDING an infant after it leaves its mother's breast involves the whole subject of dietetics. We have just had a course of three lectures (Professor Chittenden, Cartwright lectures) on one part of digestion, yet are now to compress the entire matter into a ten-minute review. The review must be cursory in the extreme.

The infant at birth is a carnivorous mammal, composed of nitrogenous and fatty matters, carbohydrates, and salts of lime, potash, etc. To maintain the little creature, all these substances must be supplied. The mother's milk is an emulsion of fat containing these ingredients. It is, therefore, the perfect food. The infant has a simple digestive tract which secretes very little digestive fluid of any kind. The simple milk is absorbed with little difficulty and little waste.

With the passing months, changes take place, anatomical and physiological. At six or eight months teeth appear and the salivary glands become active. This suggests the ability to eat a little of the food of adults, *e.g.*, starches. From the eighth to the twelfth month the teeth come more rapidly, the child becomes very active, uses up tissue, and needs more material to build with. Now is the time to wean and supply additional food. The exact time cannot be set. A mother who is not strong, has become pregnant, or feels nursing a tax on her constitution; should begin weaning at six or eight months. Should the child not thrive, wean early. If both mother and child are well, the physiological changes are such that the baby can leave the breast partly at ten months, and completely before a year. The transition should be gradual except in case of acute illness of the mother. Begin by giving cows' milk once or twice a day, and nursing only two or three times.

Human milk contains: proteids, 1.78 per cent.; fats, 3.83; sugar, 6.84; salts, 0.23, a total of 12.68 solids. (Leeds's average twelve mothers.) Cows' milk contains: proteids, 3.76; fats, 3.75; sugar, 4.42; salts, 0.68, making total solids 12 61. (Leeds's ordinary bottled milk.) Human milk then differs from that of the cow in containing more fat, 2.25 per cent. more sugar, less salts, and but half the proteids.

Because of the excess of proteids, cows' milk needs to be diluted one third or one half with water, depending upon the digestive power of the infant. The slight acidity of cows' milk may be disregarded in infants of six months or over. Lime-water or soda may be added earlier. Ordinary dairy milk contains from ten to twelve per cent. of cream. When such milk is diluted one half, the fats are too low; extra cream must be added. Jersey milk contains eighteen to twenty per cent. of cream, and hence requires only the addition of water, and a little sugar, possibly. I have raised Jerseys, and raised babies on Jersey milk, and heartily approve of it. It is not logical to declare Jersey milk too rich, and forthwith give directions for adding cream to ordinary milk until it is of Jersey standard. One dealer served me with milk containing eighteen per cent. of cream, another, equally well known, supplied milk only seven per cent. cream. Obviously the two could not be treated alike. Ass's milk is very nearly the same as woman's milk in composition. "Strippings" is also better than ordinary milk, being richer in fat. Neither is practicable, so they need no discussion.

In warm weather all milk should be heated to 168° F., *i.e.*, Pasteurized, to destroy ferments and prevent souring. This temperature kills tubercle bacilli, typhoid, or other germs that may be lurking in the fluid. The process of sterilizing renders casein less readily coagulated, destroys milk-sugar, and causes proteid matter to adhere to fat globules, retarding their digestion. These changes are of no importance clinically, except in weak children.

Perfect nutrition demands waste and removal of tissue, as well as new aliment, *i.e.*, complete oxidation. Sugar and starch take up much oxygen, and if given in too great quantity will detract from what should go to the albuminoids. It is the excess of one ingredient that so often begins the malassimilation that ends as rickets. The starches easiest to prepare and digest are potato, oatmeal, and barley. The two last are added to milk as diluents and for their mechanical effect on casein, even in infants only a few months old. They have no food value, however, until six months, when ptyalin is present in sufficient quantity to act on them. Oatmeal prevents constipation by causing increase of peristalsis, whereas barley tends to check diarrhœa. Choose between them accordingly.

Condensed milk is a popular substitute for breast milk. The weight of medical authority is heavily against it. As ordinarily diluted it contains less than half the albuminoids and fat needed, or if diluted to their proper proportion the sugars are doubled. As a natural result we have two kinds of babies brought up on it—one plump, but without any staying powers in case of illness, the other a starving little skeleton. Condensed milk is only to be commended when travelling, or as a temporary change when other food disagrees.

Lactose forms one half the solids of milk. Its oxidation maintains the body heat. If it be deficient, the little infant wastes and starves. As the infant of ten months grows stronger and more hungry give him stale bread or crusts to bite on. Zweibach, and toasted bread (moistened), or crackers will also supply starch, partly converted into dextrin and so easy of digestion. In baked potatoes the starch granules are finely divided, so they should be preferred to boiled potatoes. By the twelfth month soft boiled eggs may be given. In the egg we have fourteen per cent. of nitrogenous, and 10.5 per cent. of fatty matter. An egg diluted with water and sweetened makes a good substitute for, or addition to, milk. Soft boiled it digests in three hours. Additional nitrogenous food may be had in broths of beef, mutton, or chicken. Beef-tea to be of any value should be a cold infusion of a pound of steak to a pint of water, not heated until just before serving. Prolonged cooking coagulates the albumin of meat and only extracts the salts It is poor food. Meats contain much potash and lime, for which reason Routh says children need much meat to build up their bone and muscle.

During the beginning of the second year the anterior molars appear, an indication that the child is ready to masticate food. He may now have rare roast-beef to chew and suck the juice from, not to swallow. Beef is one of our best nitrogenous foods, containing 20 per

[1] Read before the Section on Pediatrics, New York Academy of Medicine, May 10, 1894.

cent. nitrogen; next comes mutton, with 18 per cent.; poultry, with 21 per cent., and nearly 4 per cent. of fat. Fish is 18.1 per cent. nitrogen, and 2.9 per cent. fat; mutton is a little easier than beef to digest but not so rich. Graham bread, rice, and corn bread can be added to the dietary now that there are teeth enough to break them up thoroughly. Bulky food stimulates digestion by causing increased muscular action of stomach and flow of juices. Concentrated foods are to be avoided as not promoting natural activity. However, liquid foods will often check vomiting without medicine.

A thin sandwich of stale bread with scraped beef and a glass of milk is a good breakfast for a babe of two to three years of age. A dish of plain meat-soup with baked potatoes, a boiled vegetable, and bread will be his dinner at noon. By three o'clock he will want crackers and milk. At six o'clock a cup of custard, or bread and butter with milk, should be the last meal of the day.

Physiologists say that children absorb three or four times as much carbon per pound weight as adults. This accounts for their eating so out of proportion to their weight compared with their parents.

At two years of age, or thereabout, the child has his twenty deciduous teeth. He can eat all plain food of a proper table, and thinks he should have everything he sees. He should not be allowed even tastes of unsuitable articles, only such food as is to form his diet. All fried food is difficult to digest. Re cooked meats are improper. All so-called rich food is interdicted, as the system is not strong enough to wrestle with foreign substances or excess of natural diet.

During the second year fruit is admissible. Scraped sweet apples are enjoyed, and digested in one hour and a half. Baked apples in milk with crackers make a good supper. Juice of oranges is good in the morning. Bananas, if very ripe are rich in sugar and much liked by the little ones. When green or unripe, bananas are largely starch. If eaten too green and too rapidly by too young a child it is pernicious food, otherwise good.

In arranging a dietary regard must be had for season, cold or hot climate, sluggish or active temperament of the child, etc. The exact weight or exact age of the child is not a proper criterion. Two atoms of hydrogen unite with one of oxygen to form a molecule of water; but you cannot be sure that a given number of grains of nitrogen will produce a definite number of foot pounds of force, or that so much sugar will produce so many heat-units.

It is often forgotten that the child needs a large amount of water, even if his diet be chiefly fluid. I have therefore included water in the table below, which I have compiled as a summary of dietetics in the young.

The following dietary may serve as a basis for directions to parents and nurses:

FREQUENCY AND SUBSTANCE OF MEALS.

8 Months, 5 Meals.

7 A.M. (*a*) Milk.
(*b*) Milk and rusk.
10.30 " (*a*) Oatmeal or barley in milk; sugar or malt.
(*b*) Beef-tea.
2 P.M. (*a*) Egg in milk, sweetened.
(*b*) Stale bread and milk.
5.30 " (*a*) Milk and cracker or zwieback.
(*b*) Milk and oatmeal or barley.
10 " (*a*) Milk.[1] Total milk, 1½ pint.

1 Year to 1½ Year.

7.30 A.M. (*a*) Rusk or cracker and milk. Banana.
(*b*) Soft boiled egg; milk. Orange.
11 " (*a*) Milk; bread and butter.
(*b*) Baked potato; milk.
2 P.M. (*a*) Beef-tea; light pudding.
(*b*) Bread, butter, bread in meat gravy from a roast.
(*c*) Meat, roast, to suck on.
5.30 " (*a*) Bread and milk. Prune juice.
(*b*) Cocoa; custard.
10 " (*a*) Milk, if awake. Total milk, 2 pints.

Two later periods in childhood deserve a moment's consideration.

Table of Food Values.

Food.	Nitrogen. Tissue-forming Proteids.	Carbon.	Fats.	Carbohydrates. Heat-giving. Sugar.	Carbohydrates. Heat-giving. Starch.	Salts.	Water.	Total solids.	How prepared.	Hours for digestion.
Human milk (Leeds)	1.78	3.83		6.84		0.23	87.32	12.68		2.00
Cows' milk (Leeds)	3.76	3.75		4.42		0.68	87.39	12.61		2.00
Eggs (Pavy)	14.00	10.50				1.50	74.00		Raw	1.50
									Soft b'l'd	3.00
									Hard b'l'd	3.15
Bread (Letheby)	8.10	1.60			51 00	2.30	37.00		Stale	2.00
									Hot	3.15
Potatoes (Letheby)	2.10	0.20		3.20	18.80	0.70	75.00		Baked	2.30
									Boiled	3.30
Beef cooked (Ranke), lean	19.30	3.60				5.10	72.00			
" " " fat	14.80	29.80				4.40	51.00			3.00
Turkey (Letheby)										2.30
Fowl "	21.00	3.80				1.20	74.00			4.00
White fish (Letheby)	18 10	2.90				1.00	78.00			2.00
Apples (Freseninus)	0.22	Pectine, 2.72		7.85		0.44	85.04	Insoluble, 2.96		
Bananas, ripe (Corenwinder)	4.82	Fat, 0.63		19.65	Traces.	0.79	73.90	Cellulose, 0.20		

Water, Croton (Chandler) (grains per gallon) sodium chl., 0.40; sulphates of potash, soda, and lime, 0.617; carbonates of lime and magnesia, 2.74; silica, 0.62; organic matter, 0.67. Total solids, 5.03.

Stimulants.—The testimony of physicians is almost unanimous against alcohol for children in health. The small percentage of sugar or oxidizable material in wines and beer is more than offset by the injuries to digestion and the nervous system. All the wisest men use stimulants guardedly, even in infantile disease. Tea and coffee have a very considerable value in checking tissue waste, and indirectly supplying nitrogenous matter and salts; but these virtues are entirely counterbalanced by the ill-effects of tannin and thein; the one causing colic, etc., the other making the child nervous, fretful, and peevish. Still the children of the poor consume great quantities of both. The millionaire's pet and the laborer's youngster start with the same anatomy, but are rarely reared on the same diet.

At the sixth or seventh year, when the deciduous teeth fall, the child must be urged to chew his food thoroughly. If he begins to attend school that will form an excuse for bolting meals.

Still later, at puberty, unusually rich or highly spiced food should be avoided lest it increase sexual excitement in the immature.

Bring up the child from the beginning to eat slowly and at regular times as much as he wants. The rules of time and quantity will be on a sliding scale in different families. In feeding infants, as in the whole practice of medicine, we must fix the principles, and prescribe with common-sense according to the case in hand.

28 WEST THIRTY-SIXTH STREET.

[1] All milk Pasteurized, if Jersey, or in warm weather.

TYPES AND METHODS OF RESPIRATION.

By J. GARDNER SMITH, M.D.,

NEW YORK.

PHYSICAL DIRECTOR HARLEM BRANCH Y. M. C. A.; SPECIAL INSTRUCTOR IN PHYSICAL TRAINING PUBLIC SCHOOLS; MEMBER COUNTY MEDICAL SOCIETY; VICE-PRESIDENT HARLEM MEDICAL ASSOCIATION; MEMBER A. A. A. P. E., ET .

We are told by the best authority (Genesis ii. 17) that when the Lord breathed into his nostrils man became a living soul. Ever since that time respiration and life have been closely related. In all forms of animal life air seems a necessary factor. In man we know that through the lungs air enters the blood. Passing through the nostrils, the pharynx, the larynx, the trachea, the larger bronchial tubes, the smaller bronchial tubes, the more minute air-passages, and finally the delicate air-cells, the oxygen of the air by a process of osmosis passes through the microscopic wall of these cells into the blood; and carbonic-acid gas passes from the blood in the reverse direction till it is exhaled again through the nostrils. Each breath then carries oxygen to and eliminates carbon dioxide from the blood.

This interchange depends upon the demand by the body; the extent of breathing surface within the lung; the elasticity and action of the thorax (or chest); upon the nervous mechanism controlling each, and, not least, upon the purity of the air we breathe. Bodily demands, of course, depend upon mental or physical exertion. The man who never makes much physical or mental effort may live to a good old age, but he is never prepared for an emergency, such as injury or disease of a portion of the lung, nor can he enjoy any violent effort with safety; and in his later years his general health, if it has not done so already, will deteriorate.

The extent of breathing surface within the lung varies with the individual. His heredity, his early years, acute or chronic disease of the bronchial tubes or lung substance determine this condition to a certain extent. He may, however, materially improve and increase this function by judicious respiratory exercises (so-called "pulmonary gymnastics"). This practice should be begun early, the earlier the better, and be continued throughout life.

The capacity of the thorax, too, may be increased by judicious exercise in breathing. The passive individual in a healthy condition at each inspiration inhales perhaps thirty cubic inches (Kirke) of air. This is called "tidal" air. The average individual without special practice in breathing or vigorous physical exercise of some kind can inhale a variable quantity over and above this, called "complemental" air. Again, this individual can exhale, by forced expiration, a variable quantity over and above the ordinary tidal air called "supplemental" or "reserve." There still remains in the chest after a forced expiration a certain quantity of "residual" air, estimated (Kirke) at one hundred cubic inches. This quantity also varies with the ability of the individual to contract all the diameters of the chest. In my statistics of 2,000 men of average age, about twenty-three years, the total capacity of the chest ("complemental," "tidal," and "supplemental" air) was about two hundred and fifteen cubic inches, and this quantity is about the same for 2,000 men since that reckoning. This capacity by practice was increased by fifteen cubic inches (average) within one year.

The interchange of air within the lungs and the chest capacity depends largely upon an intelligent understanding of the mechanics of respiration and persistent practice of the methods of respiration. Proper co-ordination of the muscles of the thorax is highly important. Many men of ordinary intelligence, and many more with "thin gray matter," have no control of the chest. Some do not even know how to inhale, to say nothing of the practice of the various types of respiration.

There are three main types of respiration in man—superior thoracic, diaphragmatic or "abdominal," and inferior thoracic—illustrated by the following photographs.

[1] Read before the Harlem Medical Association, March 7, 1894.

Mechanically, the thorax is a conical box bounded laterally by the ribs; the sternum and costal cartilages anteriorly; the ribs and spinal column posteriorly; the diaphragm, a dome-shaped muscle with a tendinous centre forming the base. This conical box is capable of movement in every direction. Muscles raise the ribs upward and forward, increasing the antero-posterior diameter; muscles rotate the ribs outward and upward and raise them laterally like the bail of a pail, increasing the lateral diameter; the diaphragm moves downward, increasing the vertical diameter.

The size of the chest thus increased the air within the lungs becomes rarefied; the pressure within the thorax becomes less, and immediately the external air, with its continual pressure of fifteen pounds to the square inch, rushes in to fill this "tendency to a vacuum." Of course it is highly important that the nostrils and other air-passages and the chest and abdominal wall be free from constriction or obstruction.

Upper chest or superior thoracic breathing (see Fig. 1,

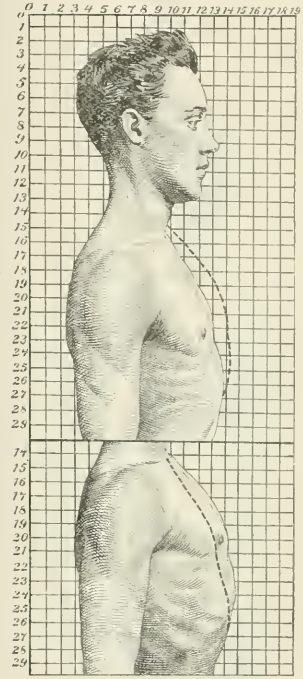


Fig. 1.

a to *b*) may be practised on command "inhale" and "exhale," or "one," "two," and "three," "four." On the first command, or first two counts, raise the upper chest, upper and forward, to the fullest extent (see *a* to *b*). Do not raise the shoulders. On command "exhale," or "three," "four," the chest should recede (see *b* to *a*); keep head erect. Pupils will grasp the idea more quickly and better by placing the left hand on the upper chest, inhaling and exhaling through the nostrils. This may be done to music (count of sixteen). The photographs show the proper movement of the chest.

Abdominal or diaphragmatic breathing (see Fig. 2, *a* to *b*). On command "inhale" and "exhale," or "one," "two," and "three," "four," lower and raise the diaphragm. This action presses the abdominal organs downward, and thus, on the first command of "one," "two," the abdomen protrudes (see *a* to *b*). Do not move the chest wall or bend the body.

To aid in understanding this exercise, press upper chest with left hand and place right palm just below lower end of the sternum. At every inhalation the right hand should be pushed forward, and on second command, or "three," "four," the abdomen should recede underneath the hand.

Practise to count of sixteen or more or to music. Always breathe through the nostrils.

Lower side chest or inferior lateral thoracic breathing (see Figs. 3 and 4, *a* to *b*). On command "inhale" and "exhale," or "one," "two," and "three," "four," distend and contract the lower chest laterally. On the first command, or "one," "two," the ribs are rotated outward and raised laterally (see *a* to *b*), as one would raise the bail of a pail. Thus the broadest part of the chest is enlarged and much air is inhaled. The writer examined one man with this part of the chest extraordinarily developed, who had a chest capacity of over four hundred cubic inches. (The spirometer recorded no higher.) On count "three," "four," or "exhale," expel the air by contracting the lower chest. In this exercise the upper chest and diaphragm should remain passive. The backs of the fingers or point of index fingers pressing lightly at about the ninth rib will enable one to understand this rather difficult exercise. The best singers have almost com-

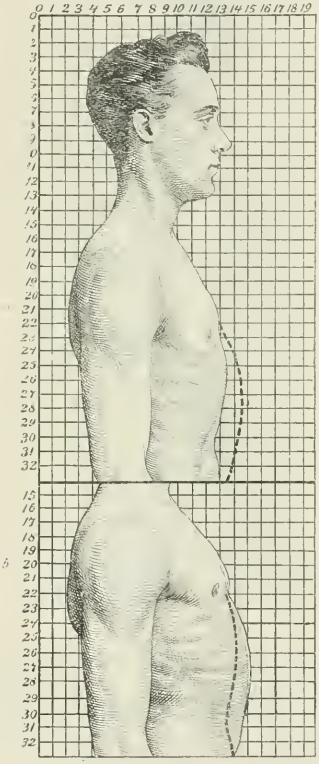
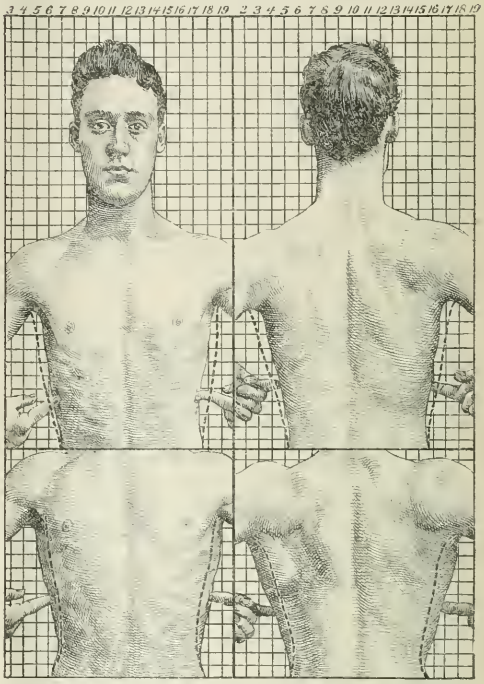


Fig. 2.

plete control of lower chest and diaphragm and breathe but little with upper chest.

Obstacles.—Of course it is highly important in diaphragmatic and inferior thoracic breathing that there be no constriction about the waist or lower chest. Many ladies cannot run or exercise vigorously mainly because of such constriction. Again, some children find difficulty in breathing with the mouth closed. In most of these cases there is some deformity or disease within the nostril, which should receive surgical attention. Another very important consideration is pure air. The air of a well-ventilated room, class-room, or gymnasium may be beneficial, but every opportunity for practice in the out-of-door air should be improved. Running or other vigorous exercise stimulates respiration, because the blood demands more oxygen. The individual who understands how to use his chest is able to meet this demand more readily. In the individual with a large chest capacity, who understands how to breathe, who is free from disease of bronchial tubes or lung-tissue and without heart disease, shortness of breath is seldom seen. Breathing exercises are most beneficial



Figs. 3 and 4.

when practised after muscular exertion. They should occupy an important place in physical training.

The effects are better development and control of the thoracic muscles; more power in speaking and singing; a healthier condition of the lungs; improved circulation of the blood within the lungs; more rapid and efficient aëration of the blood; better general health.

307 Lenox Avenue.

New Drugs and New Names.—Our esteemed English brethren must be especially keen on new drugs, and in particular on new names of a proprietary character. A casual glance through the advertising columns of *The Lancet* (which is sometimes considered a conservative journal) gives one quite a new idea of modern materia medica. The following list of "new drugs" is taken from a single issue: "nepenthe, malakine, virol, pepsalia, pumitine, cactina, celerina, antinervine, cerebrine, papain, anestile, opiatine, lintus tussi, kreochyle, vapo-cresoline, chiralta liq. cocoatina, izal, bynol, bovril liquor sedans." These are not all, but they are sufficient to show the pharmaceutist's fancy, and the appreciation of it by the British mind. To the student, and even the recent graduate of medicine, all these things must appear quite unintelligible, and he must feel that having learned the materia medica of his text-books, he must begin again and learn that of the manufacturer.

A FEW APHORISMS RELATING TO OBSTETRICS.[1]

By A. C. EWING, M.D.,

SALT LAKE CITY, UTAH.

What to do, and what not to do, in the management of labor—that is the question.

No branch of a physician's practice requires more self-poise; and where so many complications arise commanding our sympathy and demanding our skill, as that of obstetrics, and when disease and death follow a normal case of labor, the cause can be traced to none other than to ignorance or mismanagement.

With these preliminary remarks, I shall advance a few aphorisms relating to obstetrics.

1. Examine the urine a week or so before the expected confinement. Albumin need not cause alarm, unless present in large quantity, in which case the woman should be restricted to milk diet, given one-tenth grain sulphate spartein four times a day, and bowels kept open with cream of tartar; the object being of course to relieve congestion of the renal veins.

2. Make no digital examination without first cleansing the hands and nails, together with the external genitals, with a solution bichloride mercury, 1 to 2,000 and ethereal soap.

3. Empty the rectum thoroughly with an injection of warm water.

4. Make as few examinations as possible during progress of labor, and each time dip the hand first in the antiseptic solution.

5. If presenting part emerges slowly from the womb, do not allow your impatience to so get the better of your judgment as to induce you to "assist nature" by pulling upon the os. I am strongly of the opinion that about all the deep pathological tears, calling for surgical interference, found on the right and upper anterior sides of the cervix, are caused by the finger of the accoucheur.

6 If "pains" are sluggish, change the position of the patient.

7. Do not rupture the "bag of waters" too soon, as it, when intact, favors, I believe, the posterior rotation of the face.

8. Should a posterior rotation of the occiput occur, and nature fail after a reasonable length of time to effect a delivery, apply the forceps and turn the occiput to the front, by rotating either to the right or left, as the position of the babe would indicate.[2] This manœuvre of the forceps can be executed without danger if care be exercised, turning the head not more than a quarter of a circle at a time, then pausing a moment for the shoulders to follow. After this is accomplished the instruments should be removed and re-applied.

9. In making traction on the child's head with the forceps, unlock them about every thirty seconds, else the engorgement produced by continued pressure of the instruments might cause a hæmatoma of the brain or dura.

10. To prevent a rupture of the perinæum.

When the occiput is emerging from the vulva, remove the right hand from the forceps and with it support the soft parts, while with the left you continue slight traction upward until the bridge of the nose reaches the anterior border of the perinæum, when the instruments are quickly removed; now, in order to avoid a rupture, especially if an expulsive effort is being made, hold the head *in statu quo* until a relaxation takes place; then, with the thumb and first two fingers of the right hand, push the perinæum down and under the chin, allowing it to rest on the palmar surface of the fingers. The next pain will expel the head, which is grasped by both hands and pulled upward—delivering the under shoulder first.

11. Should a rupture occur, repair the injury at once, using the large iron dyed silk.

12. Do not become impatient if the placenta does not follow quickly, but wait, say a half or even an hour, before an attempted forcible delivery is made. Should, however, a violent hemorrhage occur, empty the uterus at once, by disinfecting the hand, introducing it into the womb, detaching the placenta, and allowing it and the hand to be forced out together.

13. The source of uterine hemorrhage following labor arises almost always from the open and now no longer useful utero-placental vessels. Nature, ninety-nine times out of a hundred, prevents hemorrhage arising from this source by filling up these tortuous vessels and plastering over their open mouths with coagulated blood. Therefore:

14. Do not use Crede's method, and for two reasons: first, that the act of squeezing out the placenta dislodges at the same time from the anfractuosities and vessels this plastic coagulum, inviting streamlets of blood to follow the non-pressure of the hand, causing in all probability a hemorrhage instead of preventing it. The second reason is, that a hemorrhage following after this method of forcible expulsion, necessitating, as it usually does, a constant hand-pressure over the uterus for half an hour or more, while it may not prevent absolutely the reformation of nature's cement, would, in my opinion, cause paralysis of the contractile fibres of the womb, rendering them incapable of responding to the stimulus of ergot or to anything else. (When I see a woman who is suffering from uterine subinvolution, I unhesitatingly lay it to the undue paralyzing pressure it has received.)

15. For these passive hemorrhages where, so soon as the hand is removed the hemorrhage goes on, I rely on one teaspoonful of laudanum rather than two or three of ergot.

16. After the birth of the child, gently knead the abdomen with the finger tips of the left hand, using barely force enough to feel the uterus beneath. This gentle friction excites uterine contraction far better than rough massage, expelling the placenta almost as quickly, and is rarely, if ever, followed by unpleasant hemorrhages or after pains. This slight finger-pressure should be continued a short time after the placenta is expelled.

17. In early abortions, before atrophy of the blood-vessels of the mucosa takes place, the hemorrhage comes greatly from this engorged mucous membrane instead of entirely from the placental surface, as in full term. To stop it, do not use ergot or compression, but approximate the inner surfaces by removing the decidua with the placental forceps and dull curette. This is to be followed by a hot antiseptic (preferably carbolic acid) intra-uterine douche.

18. Have the vulva kept well covered with sublimated cotton to catch the lochia and prevent hetero-infection; and, in addition, if a clean and competent nurse is in attendance, order given, night and morning, for five days, warm antiseptic vaginal douches.

19. Wash the babe's eyes the moment it is born; and, in dressing the navel, use borated cotton saturated with glycerine.

20. Restrict the diet the first three days only, after which have the bowels moved either by an enema or the compound licorice powder. (If there is much flatus, use instead a full dose of castor oil and turpentine.)

21. Keep the woman in bed two weeks if possible, and the first four days give a capsule containing 1/2 gr. ergotine and 2½ grs. quinine morning, noon, and night. This tends, I believe, to prevent fever and hastens the process of involution.

22. If surgery is your specialty, and you are called to a case of confinement, use extra precautions in cleansing the hands and nails; in fact, it would be wise, if your practice in surgery is extensive, to let obstetrics alone, for I care not how skilful you may be (and surgeons as a rule are skilful), you will, sooner or later, lose from septic infection the wife of some one, and it may be, alas! the wife of your dearest friend.

[1] Read before the Salt Lake Medical Society, April, 1894.

[2] E.g., when in a right O. P. Iliac position, turn the forceps to the right, and when in the left O. P. I. position, turn to the left. The child can be turned, however, and without danger, even when in a direct O. P. position.

THE DYNAMICS OR POWER OF THE INTERNI.[1]

By FRANCIS VALK, M.D.,

PROFESSOR OF THE DISEASES OF THE EYE, NEW YORK POST GRADUATE SCHOOL AND HOSPITAL.

In the static condition of the external muscular apparatus of the eyes, we find these organs directed forward, slightly downward, about fifteen degrees below the horizon, and slightly convergent, so that the visual lines are directed toward a point about twelve feet distant in front of the eyes. In this position the visual lines will form an angle, whose base extends from each centre of rotation in the eyes and whose apex lies at the point mentioned above. This angle is called the muscular mesoropter; and when the eyes are fixed in this position, the external muscular apparatus is supposed to be completely at rest, with binocular vision.

Starting from this position of rest, the eyes are, by the active force of the straight muscles of the eyes, moved consensually, in different directions, according to the sensations produced on the retina by the rays of light. It is this active power of the muscles, particularly that of the interni and its antagonist, the externi, which I offer as the object of this paper.

In the examination of the eyes and the muscular apparatus, by which we may endeavor to draw certain conclusions or arrive at any specific results, we are accustomed to compare the examination of one hundred cases. I have therefore selected this number, from the last cases on my note-books, in the hope that this examination may be of some service in the correction of asthenopic troubles. For the past year or more I have been interested in the active power or dynamics of the interni, and so have tested that power as well as that of its antagonistic muscle in this series of cases, and I have been somewhat surprised at the result. All these cases have been examined in my office with, I think, reasonable care, and I feel satisfied the results are very nearly accurate, and will leave the final results to speak for themselves, as I am not prepared to say just on what lines all these cases may be treated.

When we study the refraction of the eye, with all its complex apparatus, each part of which works so beautifully in conjunction with the other, and the complications that may arise, we are apt first to consult Donders and note his remarks. So as I turn to him I find that even before his work was published, or some forty years ago, many bold surgeons, at that time, were performing tenotomy of the externi for the relief of asthenopia, not only in myopic cases, but in all others. In many cases they must have been successful, but in others, with the usual enthusiasm of the profession, it was carried too far, and the results were far from successful, even disastrous in some cases. Still, it was continued, more or less, until Donders found that most of the cases of asthenopia were due to a shortening of the optic axis, or hypermetropia, and the tenotomy of the externi passed into "innocuous desuetude." Then for many years we followed the teachings of Donders, and gave convex glasses to all our asthenopic cases, until the present day, when we have two questions presented to us. Firstly, that of insufficiency of the straight muscles, either in their actions vertically or horizontally, as advocated by Dr. George T. Stevens. And secondly, since we have used that excellent instrument of precision, Javal's ophthalmometer, we find astigmatism, due to the curvature of the anterior surfaces of the cornea, unless neutralized by the curvature of the posterior surface (Tschering) or that of the crystalline lens. This is the active cause of all asthenopia, and must be corrected.

I propose, at present, to take a conservative view of both propositions, and believe we will find cases where relief will depend on either condition. Correcting the last proposition of astigmatism first, and then, in case of failure, turning to the first proposition, where I believe we may find success for the relief of the asthenopia.

In looking over the literature of this subject in our text-books, I failed to find any positive statement in reference to the dynamic power of the straight muscles. In Saelberg Wells's last edition, I find the active power of the interni as about twenty to thirty degrees, and that of the externi as six to eight degrees. In Noyes's work on "Diseases of the Eye," I find the best exposition of this subject; but in his table of one hundred cases his results seem very different from my own examinations. He reports seventy-five per cent. with insufficiency of the externi, with nearly fifty per cent. emmetropic, while I have only two per cent. emmetropic. I cannot consider a low degree of hypermetropia as an emmetropic eye. Dr. Stevens considers that the active power of the muscles should be respectively about fifty degrees for the interni and ten degrees for the externi, or in the proportion of five to one; but in my examinations I have never found them as high as Dr. Stevens, except where the muscular power has been exercised by prisms, when this result may be obtained.

From my own examinations, I am inclined to think that if the power of the interni stand to that of the externi in the proportion of four to one, or even three to one, we will have no muscular asthenopia; in other words, the interni should be three or four times stronger than the externi, for comfortable work at the reading distance. This will give sufficient reserve power according to Landult, for all useful purposes.

In my examinations, I regret to say, I have been disappointed in the tests for the dynamic power of the muscles of adduction and abduction; as with Von Graefe's vertical diplopia test, Stevens's phorometer, and Maddox's rod test, I have found some cases exactly opposite to that of the prism test. Hence, I have confined my tests to the simple power of each individual muscle to overcome the deviation of a ray of light from a candle placed at fifteen feet, passing through a prism with the apex placed over the muscle to be tested, using the test without a colored glass placed over the other eye. This method may have its faults, but I think we should have the eyes in the best possible conditions to develop the full muscular power, that is, the power to fuse the images by causing them to fall upon the macula in each eye.

I do not think we maintain that condition when we reduce the retinal impressions by a disk of colored glass or by a vertical displacement of the images, so that the rays may fall upon a less sensitive part of the retina, and in both instances we lessen the stimulation for a correct fusing of the images.

As an instance of my preference for this simple test, I find that, in forty-eight cases, the vertical diplopia test agreed with the prism test in only twenty-nine, and was exactly opposite in the remaining nineteen; in other words, the first test would show esophoria or homonymous images, indicating weakness of the externi, while with the prism test we would find that the dynamic power of the externi exceeded that of the interni, according to the proper proportion. Either one or the other must be wrong, and I think we may depend on that which allows the eyes to be tested under the same conditions as exist when the eyes are used at their daily work.

In compiling the result of one hundred cases of asthenopia I have used the following tests. Refraction, phorometer, vertical diplopia, prism test. Also recording the treatment, as the correction of refractive errors if present, the prism ordered, operations, if any, performed, with the final result as far as possible.

As regards the refractive errors, I have used atropine in some doubtful cases, otherwise not, as I agree with Roosa that at the present time it is not necessary to put our cases to the inconvenience of blurred vision, from paresis of the accommodation, but I have verified my trial by glasses, with the retinoscope, the ophthalmoscope, and the ophthalmometer of Javal. I believe, when these four

[1] Paper read before the Ophthalmological Section of the Academy of Medicine, New York City, November 19, 1893.

tests agree, we cannot be very far from the exact condition of refraction in our cases. I place the examination with retinoscopy first, as I have found that the most reliable and correct objective test in reference to the final results of the vast majority of cases. It gives the refractive condition of the dioptric apparatus, showing any astigmatism and the axis very rapidly and correctly. I use the plain mirror only at a distance of forty inches and read my results, as shown by the retinal reflex, without reference to any so called shadows, or by using a lens of one dioptry placed before the eye. I may differ with some of my colleagues in this respect, but I am satisfied my examinations are correct, as they have been confirmed by the examination under atropine. In many cases I have noted the existence of an astigmatism of one-fourth of a dioptry by this simple test.

The ophthalmoscopic test I consider a very valuable and useful one, but I have not been able to confirm an astigmatism of less than one half dioptry, while in the use of the ophthalmometer of Javal I have fully published my result, but I now depend more upon the approximation of the mires and the size of the image, reading off the radius and the degree of the astigmatism in dioptries, on the arc, than I do upon the overlapping of the image of the mires. I find these markings much more correct, while in most cases it is not necessary to allow the usual one-half dioptry. It is also difficult at times to tell the exact overlapping, but we can readily see when the edges of the mires touch in the primary and secondary positions. My rule is, in all refraction cases, that these objective examinations shall agree, and I expect to find the same result in the trial by glasses.

In all these cases as tabled, the refraction was corrected by glasses first, and a fair trial given; and I believe, in a large majority, they were relieved of their asthenopia, even though the active power of the interni was found far below that of the normal standard; but if they were not relieved, then I felt that I must seek some other cause for their asthenopia, and endeavored to correct whatever muscular insufficiency I could find, relying in all cases on the simple prism test.

The refractive conditions of this series of cases also seem to present some features of peculiar interest, as they do not agree with any tables I have noted. Taking the cases in their sequence of frequency I find:

	Cases.
1. Simple hyperopic astigmatism, axis 90°	40
2. Compound hyperopic astigmatism, axis 90	26
3. Compound myopic astigmatism, axis 180°	8
4. Hypermetropia	5
5. Simple myopic astigmatism, axis 180°	4
6. Mixed astigmatism	4
7. One eye—Am. the other Ah	4
8. Simple hyperopic astigmatism, axis 180°	2
9. Emmetropia	2
10. One eye, Ah., the other Amh	1
11. One eye, Ah., axis 90°, the other Ah. 180°	1
12. One eye, H. w. Ah., axis 90°, the other same, axis 180	1
13. Compound myopic astigmatism	1
14. One eye, Ah., axis 90°, the other M. w. Am., axis 90	1
Total	100

In most tables of refraction we are accustomed to note hypermetropia as the prevailing condition;[1] but now, with the improved methods of examination and perhaps increased proficiency, I find that the largest number have simple hyperopic astigmatism, and the next largest the same condition, associated with hypermetropia, these two classes forming more than sixty per cent. of the entire number, and evidently the prime factor in the causation of asthenopia.

Passing now to the test which forms the object of this paper, I noticed, in many of my cases, examined in the past year, that the tests before mentioned for insufficiency did not give satisfactory results, so that I have been compelled to rely entirely upon the simple prism test. This shows the power of the straight muscles of the eye to turn it on the centre of rotation, so that the visual line shall be coincident with the rays of light passing through a prism.

You are, no doubt, all familiar with the simple test of placing the apex or angle of the prism over the position of the muscle to be tested, and increasing the size of the angle until the muscle loses its power to form a single image, and diplopia results.

Taking this as our test and then as our standard power, that the muscular power of the interni shall be to that of the externi as at least three to one or, better, four to one—Noyes says six to one, I found in this series only sixteen cases with that result. In the largest number, I found the power of the muscles equal, or as one to one, the total number being thirty-seven of this series. The rest of the cases varied in the proportionate power of the two muscles, in some the power of adduction was too great as compared with abduction, and in others exactly the reverse condition, and the power of abduction exceeded that of adduction. To place my results in tabular form I found.

Taking the power of the externi as one, then we have: one to one, 37; to one and a half, 5; to two, 20; to three, 12; to four, 4; to five, 4; to twelve, 1; to fifteen, 1; and to fifty, 1. In all of these the interni exceeded the externi, except the first thirty-seven cases. Now taking the power of the interni as one, and we have: one to one and a half, 3, and one to three, 1, while in three cases there was a very decided difference in each eye. Of the entire number only sixteen were within the standard limits; showing that in a vast majority of my asthenopic cases there was an insufficiency of the interni. "Noyes on Diseases of the Eye," p. 195, says: "In this proving, great diversities will appear according to the condition of refraction, especially will weakness of adduction appear, with myopia. On the other hand, defective abduction will more frequently be found in emmetropia and hyperopia and astigmatism."

I was surprised at the above result, as I expected it would be similar to Noyes's examinations; yet they seem to be just the opposite. We have only forty-nine in which the power of adduction exceeded that of abduction; but in only one half of these cases did it reach anywhere near this normal standard, as I have suggested; and when it was near this normal, then I find that in all my cases they were relieved by glasses.

In four cases I found the power of the one eye different from that of the other, both the interni and the externi being different in their proportions to each other; also in three cases there existed a constant diplopia, two showing esophoria, or weakness of the externi, of 5° and 30° respectively; with one case of exophoria, or weakness of the interni of 15°.

My treatment of this series of cases has been as follows: In all, the refraction was first corrected by glasses. When this did not prove satisfactory, I then examined the power of the muscles, and in eighteen cases, or nearly twenty per cent., ordered prisms combined with the correcting glasses. In four cases the interni was exercised by prisms three times a week, with relief for various periods. In two, partial tenotomy was advised and refused. In the three cases with constant diplopia, I did a complete tenotomy; and in six cases I did a partial tenotomy, with relief and decided improvement in the power of the muscles to overcome the prism test; so that in one-fourth I thought it advisable to correct the insufficiency as I found it, before I could get relief from their asthenopic symptoms

My indications for the extent of my tenotomies has been as follows: If I find there is a constant diplopia, with a deviation of the visual lines of ten to fifteen degrees or more, I find the muscle I decide to cut, with as slight a laceration of the conjunctiva and capsule of Tenon as possible; then with a very small hook beneath, I cut the tendon completely free from the eyeball, and allow the wound to heal without sutures. I believe the results of such an operation, when the vision is normal in each eye, will be about ten to fifteen degrees. If I de-

[1] See my paper before the State Medical Society, on Our Refraction Cases.

cide to perform a partial tenotomy, then I find my indications in the preponderance of power in one muscle over its antagonist, as compared with what I consider the normal balance as before stated.

So if I find the proportion as one to one, and the case is not relieved by glasses after a fair trial and thorough examination, I proceed to operate. This operation I perform by finding the muscle with a very small strabismus hook; then with a very small pair of scissors I cut the fibres of the tendon above and below, always leaving one small fibre in the centre of the tendon intact. I have found the results of that operation about three to five degrees as shown by the prism test.

We now come to the conclusions that these series of cases seem to present:

1. That in more than fifty per cent. of our asthenopic cases we will find that the power of the externi exceeds that of the interni, in comparison with the usual proportions that should exist between these muscles; in other words, that insufficiency of the interni is much more frequent than is stated in the text-books. I found only three cases of insufficiency of the externi.

2. That I place very slight reliance on any test for insufficiency of the muscular power, when we reduce the visual impressions of one eye by any means. Consequently, I can only rely upon the old test of the actual power of each individual muscle to turn the visual axis of the eyeball, coincident with a ray of light, deviated by a prism, from a candle placed at twenty feet from the person examined. In forty eight cases the vertical diplopia test did not agree, and was exactly opposite to that of the prism test in nineteen cases.

3. That in cases where the proportions of the muscles are as one to one, we may exercise the weak muscles for a reasonable time or as long as their power will increase, but I would state that I have found this exercise useful only in weakness of the interni. Or we may order prisms, combined with the glasses, with the base over the weak muscles. They may afford relief, and I have not found any of my cases develop a latent insufficiency from their use. In some cases these means afford, for a time, complete relief; but there may be a return of the muscular weakness; in other words, the improved power obtained by exercise or prisms is not constant.

4. That in all cases the error of refraction, either simple or with astigmatism, should be corrected by suitable glasses, and these should be worn for a month at least, before we attempt to correct any muscular insufficiency.

5. That, in diplopia, we should do a complete tenotomy, carefully performed, with as slight a laceration of the tissues as possible.

Lastly, that, in insufficiency well marked, after the results of several trials with the prisms are the same, we may then perform a partial tenotomy, as stated, with full confidence of a good result.

Measles in Samoa.—Dr. Davies, of Savaii, Samoa, writes to the *British Medical Journal* an account of the first invasion of measles into that island group. The disease was brought there in September, 1893, and in the following three months about 1,000 of the entire population of 34,500 died from its effects. The epidemic was mild and few died during the period of fever and eruption, the great mortality being due to the sequelæ and complications. The deaths were principally from gastritis, enteritis, diarrhœa, and dysentery. A few died from suppressed measles. The craving the natives manifest for raw fish, unripe or over-ripe fruit, and especially half cooked fresh pork, became morbid during the period of convalescence. Many, lest they should be told to avoid these, abstained from procuring foreign medicine. Nine-tenths of the deaths could have been prevented by care in diet, and even the worst cases of diarrhœa and dysentery yielded readily to treatment. Those patients who placed themselves under intelligent medical supervision, and who followed out the directions as to medicine and diet nearly all recovered.

Clinical Department.

HYDRONAPHTHOL IN PHTHISIS PULMONALIS.

By CARL B. SMITH, M.D.,
BINGHAMTON, N. Y.

Since January 1, 1893, I have been using hydronaphthol hypodermically in the treatment of phthisis pulmonalis with the following results: Out of 31 cases, in all stages, that I have treated I have had only 9 deaths, 8 are enjoying fair health to day but are incurable and 14 have been cured completely. I use it in the strength of grs. v. to ʒ j, and the following are the effects: The hectic fever disappears, the appetite returns, the cought lessens, the lungs clear, and the patient commences to gain in weight, some having gained as much as four pounds in one week.

In one case which I tested with the microscope (Ehrlich staining) the bacilli were found to disappear from the expectoration.

In all my cases I did not give either creosote or cod-liver oil, and can only give the credit of my success to the judicious use of hydronaphthol.

At the present time, after having practised this treatment for more than a year, I look for a cure, in the incipient stage, inside of three weeks; in the second stage, fifty per cent. cured inside of five weeks; in the last stage, life prolonged and some cures, but I will have to work further in this stage.

Working from the germ theory I used hydronaphthol in three cases of lobar pneumonia, and in each case the temperature dropped from 102° and 103° F. to normal; after the first treatment the cough loosened, and after the third treatment they were cured.

REPORT OF A CASE OF FRACTURE OF THE PELVIS, FRACTURE OF THE FEMUR, AND LACERATION OF THE BLADDER; RECOVERY.

By W. B. CUNNANE, M.D.,
SANTA BARBARA, CAL.

Fracture of the pelvis is said to be uncommon in men, rare in women, and almost unknown in children. It is usually produced by a crushing force, such as a caving of earth or stones in a mine, catching the body between two objects moving in opposite directions, or the passage of a heavy wheel across the pelvis.

There is usually a great deal of obscurity attending the diagnosis; and, even when the fact of the fracture is clearly made out, it may be very difficult, or almost impossible, to locate the exact line of separation. Examination by rectum, and in females by the vagina, may enable one to arrive at greater certainty, but frequently the most careful exploration may fail to determine the extent of the injury.

The gravity of these fractures usually depends upon the number and extent of the complications present, rather than the injury inflicted on the bone.

This fracture, especially when it takes place in children, occurs so infrequently that I deem the following case sufficiently interesting to the profession to make a report of it.

G. M—— was a native of California, female, aged five years, copper color, black hair and eyes; well developed but small for her age. She had measles when three years of age; and one year ago was confined to bed four weeks, on account of an injury to the head, produced by a fall; recovery complete.

Her present injury was caused on April 5th, by the wheel of a truck, heavily loaded with hay, passing diagonally across the anterior surface of the body, from the middle of the right thigh to the lower margin of the ribs on the left side.

On inspection: Dorsal decubitus; the left eye ecchymosed and the surrounding skin abraded; the left hand presents a contused appearance, and there is lateral bending of the second finger. There is a contused mark, about two inches wide, passing diagonally upward from right to left, across the pelvis, just to the left of the symphysis pubis. The left lower extremity is lying on its outer side flat upon the bed, and drawn up toward the trunk. The right lower extremity presents a shortened appearance, with some deformity about the middle of the thigh; the foot rotated outward and lying with its external margin flat on the bed.

On superficial examination I made a diagnosis of contusion of left eye; fracture of second phalanx of second finger of left hand; oblique fracture of right femur at junction of upper with middle third; fracture of the left os innominatum, or a separation of its primary centres, and probable injury to some of the pelvic viscera. The fractures are all simple.

The pain incident to making a careful examination and applying treatment was so intense that it was necessary to administer an anæsthetic. Therefore I requested assistance, and at the suggestion of the family Dr. R. J. Hall was called. Having to wait about two hours for his arrival, during the interval I gave morphia sulphate for the relief of pain.

As soon as the doctor arrived the little patient was placed under the influence of an anæsthetic, and with the finger in the rectum a careful examination was made; but we were unable to secure distinct crepitus, neither could we make out the exact line of fracture of the os innominatum The fractured femur was placed in a plaster-of-Paris bandage without extension, the plaster enveloping the hips and trunk to the axillæ. She was then returned to bed and instructions given the parents to maintain perfect quiet, to preserve the urine for future inspection, and administer light nourishment.

April 6th.—Pulse, 120; temperature, 101° F.; respirations, 28. She maintains the position originally assumed; the kidneys acted three times during the night, and the urine contained a quantity of blood. She did not sleep much during the night, and is crying with pain in the left inguinal region. There is extensive swelling in and around the hip joint extending downward almost to the knee. The inner side of thigh, high up, and the left labia are very much ecchymosed, swollen, hard, and painful to the touch; the swelling and ecchymosis extending from the symphysis pubis, anteriorly, to the anus, posteriorly, not passing beyond the median line, nor above Poupart's ligament. The eye, hand, and right lower extremity are doing very nicely, no swelling or pain.

We cut the plaster bandage where it encircled the hips about two inches up its middle, anteriorly, for the purpose of relieving pressure on the ilium. Not finding sufficient injury of the external genitals to account for the discharge of blood in the urine, we came to the conclusion that it was produced by laceration of the bladder, or internal portion of the urethra. Having arrived at the above inference we desisted from further examination, agreeing to await developments, and should the symptoms indicate the necessity of it, perform laparotomy.

April 7th.—Pulse, 100; temperature, normal; respirations, 25. The kidneys acted frequently during the past twenty-four hours, but the urine did not contain any blood. She is resting quietly now, and slept moderately well during the night. She maintains her original position; the swelling of left hip and thigh increasing, ecchymosis more marked, and cries with pain if disturbed. The eye, hand, and right lower extremity progressing nicely toward recovery.

From April 7th, to the date of discharge, May 5th, convalescence was progressive and uninterrupted, except by a mild attack of rubella, which produced a slight rise of temperature, sick stomach, and looseness of the bowels, lasting about twenty-four hours.

The dorsal decubitus; the entire extremity lying on its outer side flat upon the bed, the thigh flexed to its extreme limit upon the trunk, and the leg on the thigh, which position was maintained during the first three weeks patient was confined to the bed; the extensive exudation and effusion existing in and around the hip joint extending downward almost to the knee; the deeply situated ecchymosis and exudation into the left labia, its adjacent and subjacent tissues, not passing beyond the median line; the pain incident to the pressure of the plaster of Paris on the ilium disappeared immediately after it was divided up the middle, anteriorly; the intense pain which was produced whenever an attempt was made to move the limb or pelvis, and the discharge of blood in the urine, all combine to form an aggregation of symptoms which point to the correctness of the diagnosis. To be sure, we were unable to trace, with the finger in the rectum, the line of separation, but all of the other symptoms, subjective and objective, indicate fracture of the os innominatum, or separation of its primary centres, and laceration of the bladder or internal urethra.

At the present writing, June 2d, she walks with a perceptible limp in the right leg, which is due to about two ctm. shortening; there is, also, a sort of a shuffling movement similar to that of a woman after an unusually hard confinement; otherwise recovery is complete.

A NEW CARDIAC TONIC DOSIMETRIC GRANULE.

INDICATED IN CASES WHERE THE HEART'S ACTION IS IRREGULAR, WEAK, OR DIMINISHED IN TONE AND IN NUTRITION.

BY EDWARD C. MANN, M.D.,

MEDICAL SUPERINTENDENT SUNNYSIDE SANATORIUM, NEW YORK; MEMBER MEDICAL SOCIETY OF THE COUNTY OF NEW YORK; MEMBER BROOKLYN PATHOLOGICAL SOCIETY; HONORARY MEMBER MEDICAL SECTION IMPERIAL UNIVERSITY OF KHARKOFF, RUSSIA; PRESIDENT OF NEW YORK ACADEMY OF ANTHROPOLOGY, ETC.

In the treatment of nervous and mental diseases, and especially of inebriety and the morphia habit, we find mechanical difficulties and nutritive disturbances associated with valvular and neurotic affections of the heart. We cannot use digitalis in these cases without the great danger of getting up a condition of defective nutrition and secondary degeneration of the heart. We have in these cases to properly tone and increase the nutritive condition and working capacity of an enfeebled or irregular heart. We want a remedy that will at the same time nourish the heart muscle and slow a rapid and quicken a slow heart. We want a remedy the physiological action of which will be to establish a regular rhythmical action of the heart. This we can obtain very satisfactorily by the cardiac tonic dosimetric granule which we present to the profession. We are in a position to day to get a much higher degree of certainty in the administration of medicinal agents by the use of alkaloids, glucosides, resinoids, or organic acids, as medicinal agents, instead of the often complex and variable crude drugs which characterized old methods of treatment. These "active principles" are in many cases transmutation products, that is, they are obtained from the native substance by the action of a series of chemical reagents, and sometimes by the additional action of heat. Some of the alkaloids do not exist in the plant, apomorphia, for instance, which cannot be extracted as such from the opium, but is made by the action of heat and hydrochloric acid, from morphia. In this new method of dosimetry, and particularly by hypodermatic dosimetry, we can, by our knowledge of the exact chemical identity of our remedy, and of the precise quantity injected into the system, determine the nature and degree of the effects of this definite substance upon the physiological processes, both in health and disease, with a degree of accuracy hitherto unknown in the science of medicine. We know, furthermore, that an exact amount of the active principle reaches the lymph spaces and circulatory channels, when from its chemical

nature we can give it hypodermatically. Never before in the treatment of disease have we been able to treat it so exactly and obtain such certain and permanent relief as we can to-day, by dosimetry, and particularly by hypodermatic dosimetry. What we need now is better adaptable chemical forms of the "active principles," alkaloids, glucosides, or other definite active principles, and then we shall be in a position to have a new, exact, and scientific system of therapeutics. Hand in hand with this must go an exact system of feeding our patients (proteid diet) which shall require the least vital force and oxygen to digest, assimilate, and appropriate the food ingested, and give the most force and energy.

The formula for the cardiac tonic dosimetric granule which I use is as follows. Each dosimetric granule contains:

R. Morphia ..... gr. $\frac{1}{32}$
Strychnia ..... gr. $\frac{1}{134}$
Atropine ..... gr. $\frac{1}{3\,6\,0}$
Caffeine ..... gr. $\frac{1}{6\,7}$

We have here a granule with a fixed therapeutic activity which can be used hypodermatically, if desired, by simply dissolving it in water, and which, clinical observation proves most satisfactorily, will impart to the heart a better nutritive vitality, increased working-power, and a regular rhythmical action. It is well to bring the patient down to a restricted diet of milk, buttermilk, eggs, or raw oysters, and to correct all gastric or hepatic disturbances, to relieve the alimentary organs of their engorged condition, states which I always have to direct my attention to in the affections of the heart in cases of alcoholism, and very often in cases of the morphia habit. The use of this dosimetric granule we have always found followed by a rapid improvement in the strength and rhythm of the heart's action; and we recommend confining the use of digitalis to those cases where we need a powerful cardiac stimulant, in cases of threatened collapse, when one or two of the cardiac tonic dosimetric granules may be dissolved, and a hypodermatic tablet of $\frac{1}{1\,0\,0}$ gr. of digitaline added to it, as the most appropriate heart stimulant. Nitro-glycerine and sulphate of sparteine would also be indicated in such extreme cases, $\frac{1}{1\,0\,0}$ to $\frac{1}{5\,0}$ of the former by the mouth, with $\frac{1}{4}$ to $\frac{1}{2}$ gr. of the latter hypodermatically. I keep a solution of the sulphate of sparteine made up of the strength of 16 grs. ad aquæ ℥j., and standing by this a bottle of nitro-glycerine tablets $\frac{1}{5\,0}$ gr., and always use them simultaneously in emergency cases. In the treatment of the morphine habit also I have for years been accustomed to rely upon this latter combination for two or three days after complete withdrawal of the morphine to obviate and antagonize the psycho somatic suffering of the patient.

ANOMALOUS FŒTAL NUTRITION IN TWIN GESTATION.

By JOHN C. HUPP, M.D.,
WHEELING, W. VA.

On the second day of May, 1894, I encountered a phenomenon not heretofore observed in an obstetrical experience of forty-seven years. The mother of four children, in the seventh month, she alleges, of her fifth pregnancy, gave birth to very decidedly decomposed twins, one fœtus being very many times smaller and more completely decomposed than its twin sister. There was only one placenta, which was attached to the ordinary-sized cord of the larger fœtus, which was not larger than a thread, encircling its neck three times, and after tracing one end to the umbilicus I traced the other end to its attachment to about the middle of the cord of the larger fœtus, and around this attachment there were three or four cherry-like projections. The smaller fœtus, with or without a placenta, notwithstanding its anomalous connection, could not have been nourished through a cord so diminutive, and this, to me never-before-heard-of union, doubtless caused the death of the larger fœtus. My impression is that the insufficient nutrition of the smaller fœtus caused its death, and the resulting pyogenic material was conveyed to the larger one with fatal result.

REPORT OF THE USE OF CRUDE TUBERCULIN ON COWS.

By IRWIN H. HANCE, M.D.,
SARANAC LAKE, N. Y.

Being desirous of having the cows in the Adirondack Cottage Sanitarium free from any tubercular taint, a test was made on the herd with crude tuberculin. The herd consisted of eight cows such as are found on the ordinary country farm; to all outward appearances they were free from any disease. The day preceding the first test inoculations their morning and evening temperatures were taken per vaginam for comparison and were as follows:

May 21st.	A.M.	P.M.
1	100.5	102.6
2	101.0	.....
3	101.0	101.0
4	100.8	100.8
5	101.5	101.4
6	101.4	101.8
7	101.2	101.4
8	100.5	101.8

In looking over the literature at our command Dr. Hewetson, of Montreal, was unable to find any detailed account of dosage and temperatures; it was therefore deemed advisable to use a small dose to begin with; double the amount was given six days later to make the test reliable. The solution used contained 0.1 of Koch's lymph in each c.c. The inoculations were all made in the loose folds of the neck, just in front of the foreshoulder. Needles with very strong shanks are needed because of the thick hide.

May 22d, 8 A.M.—0.050 was inoculated in each cow. The temperatures in degrees Fahrenheit were:

May 22d.	8 A.M.	2 P.M.	8 P.M.
1	100.6	101.8	102.4
2	101.0	101.5	100.8
3	101.4	100.8	100.8
4	101.4	100.8	100.2
5	101.4	101.2	100.6
6	101.0	101.6	101.0
7	101.6	101.2	100.6
8	101.4	101.6	100.8

A comparison of the temperatures for the two days shows a negative result.

May 28th, 7 A.M.—One decigramme was administered to each cow. During the day the temperatures were as follows:

May 28th.	7 A.M.	2 P.M.	8 P.M.
1	100.6	101.8	100.8
2	101.0	101.4	101.2
3	101.4	101.0	100.8
4	101.4	100.8	100.6
5	101.8	101.2	101.0
6	101.6	101.2	101.0
7	102.2	101.6	101.4
8	101.2	101.6	101.0

On this occasion the results were equally satisfactory.

A single glance over all these temperatures shows that the normal temperature of a cow per vaginam is about 101° F. The only exception was cow number one, which was an old matron; her afternoon rise of temperature cannot be considered reactionary since the evening temperature of the day on which she received one decigramme of lymph was only one-fifth higher than that of the morning.

The ease and simplicity of the administration, with the thoroughly practical and efficient results of this test, places in the hands of everybody a simple means of discovering this very prevalent disease.

Two Deaths under Anæsthesia occurred recently in two successive days in Birmingham.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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SYPHILIS OF THE EPIDIDYMIS.

IN affections of the testicle, as they are usually spoken of, the diagnosis is ever a matter of great interest, and, indeed, often of much importance, and it is not enough for the physician to pronounce the case one of "swollen testicle" and order rest and hot poultices. Many of the diseases which attack the various structures contained within the scrotal envelope have been carefully studied, their salient features pointed out to aid in arriving at just conclusions regarding them, and their etiological bearings definitely traced. There are others which, it would seem, have not received the attentive study their more or less frequent occurrence demands. According to Dr. C. W. Allen, this is true of the syphilitic changes which take place in the epididymis while the testis proper remains unimplicated. In a paper just published in the *American Journal of the Medical Sciences*, he writes his views upon what we must acknowledge is a relatively little discussed question. The first writings of importance concerning the early syphilitic epididymitis are attributed to Engelstedt (1861), and to Drow two years later. "Since then," the writer says, "little has been added to the literature bearing upon it if we except the brief writings of Szadek."

We would here like to call attention to a Paris thesis published by Cuilleret, in 1891, entitled "Étude sur l'Épididymite syphilitique secondaire," which has evidently been overlooked. Since it touches upon some points which have been omitted in Dr. Allen's paper, we will review its chief features and conclusions. The writer believes that epididymitis by itself is a frequent manifestation of the secondary period, especially at its beginning, but that it passes unperceived, for the double reason that it occasions no discomfort and has a marked tendency to spontaneous regression. Habitual examination of the organs alone can determine its relative frequency, for its chronic course is benign and has no tendency to permanent alteration or destruction of the tissues. The opinion is, however, expressed that its presence indicates a rather pronounced attack of syphilis, which should be carefully treated, and that the probabilities favor serious manifestations in the after-stages. The matter of differential diagnosis does not appear to present many difficulties. Gonorrhœal epididymitis is certainly much more frequent, but its acute and painful symptoms would exclude this affection, though it would seem that, as an exception, a case may be acute. The induration is located in the head of the organ and is extremely hard. Diagnosis from beginning tuberculosis must offer greater difficulties where all other signs of syphilis are absent, and the element time, and possibly test treatment, it seems to us, would have to enter into the problem's solution. The first mentioned paper takes up a rather different phase of the question, and the proposition is advanced that syphilis attacks the epididymis at almost any stage as well as in the early secondary period, in the absence of any other evidence of the disease, and when there have been no symptoms, perhaps, for many years. This view is supported by a number of clinical observations, several of which add decided weight to the arguments, while some of the others are not so convincing. One difficulty which stands in the way of accepting the results of treatment as strong proof of the syphilitic nature of a pathological condition, is that mercury and the iodides are so often beneficial where there is not the least suspicion of a specific taint. This may be true even of tuberculous processes, as the writer admits in commenting upon the last of his series of cases, and says coincident evidence of tuberculosis in other organs must be looked for.

A point in differential diagnosis between this and the chronic enlargement so often left after gonorrhœal epididymitis, is that in the latter the tail of the organ is the part involved, while syphilis implicates mostly the head. There is no doubt that castration is still now and then performed for supposed tuberculosis or malignant growth, where syphilis is the real cause of the abnormality.

For this reason alone such clinical studies of the question are not amiss, for while they aid in saving an occasional testicle by means of the iodides, they tend to bring about a better understanding of the whole subject of enlargement of the epididymis; and so far as syphilis is concerned, it must be confessed the field has not been overworked.

THE RISE OF APIUM GRAVEOLENS.

IT is with considerable interest that we have watched the rise into therapeutical prominence of that toothsome adjunct to the dietary, celery. Without any adventitious aids from the physiological laboratory or critical clinical studies, it has become a formidable rival to the mystic sarsaparilla and ginseng as a popular remedy. It does not pretend to purify the blood, to be sure, but it calms the nerves, a task of even greater magnitude in these *fin de siècle* days. Apium graveolens, or celery, is, we believe, a close cousin to apium petroselinum, or parsley, but somehow it is petroselinum alone that has won serious medical attention. This latter plant is aperient and diuretic, and helpful in amenorrhœa, dysmenorrhœa, and allied female complaints. Some years ago Dr. Ransom asserted that celery also had some influence on the urinary secretion. But nowhere is it shown that it has the slightest effect on the nerves. Yet we must believe that it does have much effect, or discredit a very large percentage of medical advertisements in the daily press.

We are prepared to take a most impartial view of the situation, and will be glad to learn that celery has powerful therapeutic effects in various directions. But we protest that the burden of proof is with the populace and not with the professors. At present all that medical

science can say is that celery is an agreeable weed to eat when cold and white and crisp and clean. Indeed, it seems a pity to put it into a tincture and grade it down with sarsaparilla.

TRANSPORTATION OF THE INSANE TO HOSPITALS.

While reform in the care and treatment of the insane, during the past decade or two, has been rapid, and, in some respects, radical, the manner in which they are carried to hospitals has received but little attention. In this State, for some time past, a mild under-current has been running in the direction of reform in this matter, but so far but little good has been accomplished. The time came long ago, when the insane person should have been differentiated absolutely from civil offenders; but as a matter of fact, the two are sadly confounded to-day by many persons who have to do with the insane in one way or another.

The reason of this is perfectly plain. When a person becomes insane (and we are speaking now of persons in the humbler walks of life, who cannot afford private attendance and skilled nurses), he promptly falls into the hands of the local constabulary or police, and especially does he meet this fate if he manifests the least tendency to disturb the public peace, or in any way show violence. Dr. Stephen Smith, in a very able paper entitled "More Rational Treatment of the Insane," that appeared in the *American Journal of Insanity*, January, 1894, says: "When a person is alleged to be insane, our laws place him in the category of persons who have been accused of civil offence. In many of the States the term, 'The Accused,' is employed in the statutes when such a person is referred to. This feature of our law is a relic of the old method of arresting the violent and disturbed insane under the common law of England."

We need not attempt to portray the ill-treatment often received by the insane, man or woman, at the hand of these ignorant and harsh petty officers of the law. Too often they are manacled, or laced in a straight jacket, put in prison, and fed on prison food, or not fed at all, if, by reason of some delusion, they refuse to eat. The grossest of indignities, however, is left for them to suffer when in process of transportation to the hospital to which they have been committed for care and treatment. The superintendent of a hospital for the insane in a neighboring State recently described the manner in which an insane woman was brought to the hospital, as follows: "She was brought twenty miles or more (in a wagon) in a drygoods box. The box was just large enough for her to sit in, and this had a blanket thrown over it, and tacked all around. Ropes had been placed on the sides to form handles. She had not been taken out of the box, and had not been able to change her position from the time of starting until she reached the hospital, several hours. Imagine the condition in which I found her when I tore the blanket covering off." In the same State, not long since, a man was carried half a day's journey to the hospital, strapped hard and fast to the top of a coffin. He was in this excruciating position for many hours. When released in the hospital he could not stand or move hand or foot.

It is difficult to give credence to the two instances cited above, but the fact of their occurrence is vouched for by a correspondent in whom we have every confidence. Of course, those in charge of our public hospitals have absolutely nothing whatever to do with the manner in which patients are brought to them. Their jurisdiction begins only when the patient has crossed the threshold of the hospital door. There would certainly appear to be room for reform in this direction.

CEREBRO SPINAL MENINGITIS.

During the past year cerebro-spinal meningitis has been epidemic in several localities in this country, and among them in New York City. Dr. Henry W. Berg has made a clinical study of this latter epidemic (*Archives of Pediatrics*), and a discussion of his paper took place at the Academy of Medicine in April. The disease was also seriously epidemic in Maryland, and at the instance of the State Board of Health, an investigation of it was undertaken by Drs. Simon Flexner and L. F. Barker, of Johns Hopkins University (*American Journal of the Medical Sciences*, February and March, 1894).

Dr. Berg shows that the mortality from cerebro-spinal meningitis in New York City rose from 230 in 1892 to 469 in 1893. The majority of the cases occurred in persons under the age of five, and there was no especial difference between the sexes. The greatest mortality occurred in May, but as the disease took a somewhat chronic type, it is assumed that it was actually most prevalent during the late winter and early spring. Attention is called to the fact that the epidemic followed in a measure the wake of the influenza, and corresponded with a great prevalence of pneumonia, facts which have been observed before. There seems to be nothing in the New York epidemic to point to cerebro spinal meningitis as distinctly a filth disease, nor were there any evidences that it is ever contagious. The cases on the whole, ran a very chronic course, and there were few instances of the *foudroyant* type of the disease. The attacks began with a chill and fever or with convulsions, often accompanied by propulsive vomiting and headache. Very soon the characteristic symptoms of pain and rigidity in the back of the neck, with muscular tenderness and pain, appeared. As a rule, there was a herpetic eruption on the skin, and nasal catarrh was frequent. As the disease progressed, symptoms of irritation and compression of the brain and cord developed, delirium, photophobia, pupillary and retinal changes, ptosis, strabismus, and other paralyses appeared, ending finally in stupor.

In discussing the pathology of cerebro-spinal meningitis, Dr. Herman M. Biggs was positive in stating that the disease presented no distinctive bacteriology or etiology. Cultures are sometimes sterile, or bacteria of various kinds may be found. The pneumococcus of Fränkel is oftenest present, and after this the streptococcus and the staphylococci albus and aureus. Dr. Biggs also asserted that cerebral meningitis was always cerebro-spinal, and that there were no facts to warrant a separation of the two diseases.

Dr. Biggs's views are not in accord with those of Drs. Flexner and Barker. These gentlemen say that the epidemic and sporadic cases of cerebro-spinal meningitis are due to a particular micro-organism, the micrococcus lanceolatus, discovered by Eberth in 1880, and by

Wechselbaum in 1886. This microbe is considered to be the cause of those forms of meningitis developing epidemically or in association with pneumonia. There is, however, another class of cases in which it is caused by injuries, or appears in the course of other infections such as typhoid fever, arthritis, sepsis, etc. Drs. Flexner and Barker report cases which corroborate their view.

MEDICINE AND MODESTY.

The *Cincinnati Lancet-Clinic* insists that the medical profession is just as big as any other calling, perhaps bigger. And it wants a medical cabinet officer at Washington right away. It says: "To-day the success of the army and navy is more dependent upon the resources of the medical department of those branches of national service than ever before." There is a little anti-climax here, though the statement will not be disputed. But our contemporary continues, with access of emphasis: "Very much of the efficiency of the Interior Department is dependent upon its medical staff. The finances of the country are at the mercy of medicine, while the prosperity of all the people is wholly determined by their condition of health."

This we think is really putting it rather strong. We yield to no one in appreciation of our calling, but it seems to us that the prosperity of our country depends on the ingestion of adequate food, the observance of law, and the prosecution of our industries, as well as upon sanitation. Let us insist on acknowledgment of our true merits, and upon the high functions which public medicine fulfils. They are of sufficient weight without the adventitious trappings of an expansive fancy such as our esteemed Cincinnati contemporary seems to possess.

But let us look at what our country needs first, and our professional advancement later. The country would be benefited by a national control of matters of public health. This can be gotten best by not asking at the same time for a cabinet officer.

PROFESSOR WILLIAM JAMES'S PLEA FOR THE MIND-CURERS.

Professor James, after denying that he holds any brief for the "healers," makes this extraordinary plea:—He says: "The facts are patent and startling; and anything that interferes with the multiplication of such facts, and with our freest opportunity of observing and studying them, will, I believe, be a public calamity. The law now proposed will so interfere, simply because the mind-curers will not take the examinations. They return to science disdain for disdain; and nothing will please some of them better than such a taste of imprisonment as might, by the public outcry it would occasion, bring the law rattling down about the ears of the mandarins who shall have enacted it.

"And whatever one may think of the narrowness of the mind-curers, their logical position is impregnable. They are proving by the most brilliant new results that the therapeutic relation may be what we can at present describe only as a relation of one person to another person; and they are consistent in resisting to the uttermost any legislation that would make 'examinable' information the root of medical virtue, and hamper the free play of personal force and affinity by mechanically imposed conditions."

The mind-curer has surely an eloquent advocate in the Harvard professor. But no one except those daily familiar with the aspects of disease can understand how specious and silly such talk is. First, let us ask where are the "facts" that are so "patent and startling." Is there a single disease in our nosology which the "healers" heal in larger percentage than does rational medicine? What are the "facts" about pneumonia, fevers, phthisis, cancer, rheumatism, and all the familiar forms of suffering which the physician meets and relieves daily? Let Dr. James put a "healer" in charge of the medical ward of a city hospital and see how "the impregnableness of a logical position assists him in pulmonary œdema or a failing heart. If there are "brilliant new results," why are they not collected, authenticated, and presented to the world in a way that will bear honest inspection? At present they are simply rumors that pass from one fanciful female or over-credulous psychologist to another, and have about the evidential value of the ghost stories accumulated by the Phantom Committee of the Society for Psychical Research.

The medical profession knows well how much its art is limited, and eagerly accepts any genuine help. But it has no evidence that mind curers do more than amuse the leisure of selfish invalids and nurse the introspections of feeble philosophers.

News of the Week.

The Escape from the Electric Chair.—Governor Flower has wisely respited Mrs. Halliday, the Monticello woman recently convicted of murder in the first degree and sentenced by the judge to death in the electric chair. The commission of experts appointed to examine into her sanity reported that she was of unsound mind. In view of the evidence, even on the trial, there was no other conclusion to be drawn. The sentence was accordingly changed to imprisonment for life as an insane convict. The Governor is to be congratulated on his fairness and good sense. The Governor of Illinois might have done the same for Prendergast and with equal propriety, but it is now too late, as it is with other things he left undone.

Brooklyn last week had the extraordinarily high death-rate of 33.4 per 1,000.

Dr. Joseph Pagani, of Boston, died on July 15th. He had practised in the North End for twenty years. He was born in Borgomanero, Italy, in 1836. In 1863 he was graduated from the University of Pavia. He came to America in 1865, and after a short stay in New York went to Boston. For his kindness to Brazilian subjects he received, in 1882, from Dom Pedro the decoration of Chevalier de Buenos Ayres. In 1892 he was made Cazique and Baron Hoxley in the Aryan peerage of Russia. He was a distinguished member of several medical societies, among which were L'Académie Médecine of Paris and the Societa Medicale di Roma.

Dr. John Williams, who attended the Duchess of York during her recent confinement, has been created a baronet.

Professor Hermann Helmholtz was taken suddenly ill on July 12th, with a brain lesion and now has left-sided hemiplegia.

The Plague in Hong Kong is reported to be subsiding, but cholera is on the increase in Canton.

Monuments to Medical Men.—The work of securing funds for a monument to Professor Charcot is progressing favorably, and is receiving help from Germany and other countries. A monument in memory of the great Russian surgeon, Pirogoff, will shortly be erected in Moscow. The subscriptions for this object already amount to 12,000 roubles (about $6,000). The monument will appropriately be placed on one of the open places between the blocks of the immense new clinique in Moscow.

Texas Not the State for a Young Doctor.—A correspondent writes that he left New York to verify the well advertised chances for the young medical man in Texas; but after travelling throughout the entire State he found every place more than full, with not a few waiting for chances to earn money enough to get home. He says there is even a better chance in New York.

The Immediate Repair of the Permanent Cervix.—Dr. H. D. Gardner, of Scranton, Pa., writes: "In the article of July 7th on the 'Causes of Diseases Peculiar to Women,' you say lacerations of the cervix and perineum should be repaired early. Now I, in common with many others, believe in the immediate repair of the perineum; I have never tried to repair the cervix, but think it might be done, and in order to do this you must first find the tear. Now I know of no way so good as to look for it. Turn down the bedclothes and with a good light, lamp or candle, look and see whether there is a tear or not. No power on earth could prevent it, but you can repair it easily and quickly. I look upon this as the most important duty of the obstetrician."

Bequests to Hospitals.—The late John Crerar, of Chicago, has bequeathed to the Presbyterian Hospital of this city $25,000; to St. Luke's Hospital, $25,000.

Medical Legislators and Medical Mayors abound in France. The first to go to the aid of the murdered President Carnot was Dr. Gailleton, the Mayor of Lyons. Among the leaders of the medical section in the French Parliament are Professors Cornil and Lannelongue and Dr. Léon Labbé. These gentlemen, says *The Lancet*, recently convened a meeting of their fellow (medical) members, and the outcome of the conference was the formation of a medical group, whose duty it shall be to watch over professional interests in the two houses. M. Labbé was appointed President, and MM. Cornil and Lannelongue vice-presidents of this new group. The freshly formed party has already begun work, for it has discussed a bill introduced by M. Labbé which, if adopted—and it has every chance of being carried—will prolong the limit of age of medical students, with regard to their military obligations, from twenty-six to twenty-seven years.

Death of the Smallest Man in the World.—Dudley Foster, said to have been the smallest man in the world, died at Bridgetown, N. S., on June 20th, of heart disease, aged sixteen years and ten months. He was thirty inches high, and weighed twenty pounds.

Anticholera Inoculation.—An Indo European telegram states that within the previous few days three further remarkable instances of the success of M. Haffkine's system of anticholera inoculation had occurred at Calcutta. In the first case four out of the six members of a family were inoculated last March. The cholera appeared in the neighborhood lately, and the disease attacked one of the two who had not been inoculated, while the inoculated remained free. In the second case, five members of a family consisting of eleven persons were inoculated in March. The cholera lately attacked one of the six who had not been inoculated. In the third case, six out of a family of nine were inoculated. When the cholera prevailed in the neighborhood a few days later the disease attacked one of the three not inoculated. The Corporation of Madras have passed a resolution inviting M. Haffkine to visit that city and introduce his system.

Sir Joseph Lister.—The Council of the Society of Arts has, with the approval and sanction of the President, His Royal Highness the Prince of Wales, awarded the Albert Medal to Sir Joseph Lister "for the discovery and establishment of the antiseptic method of treating wounds and injuries, by which not only has the art of surgery been greatly promoted and human life saved in all parts of the world, but extensive industries have been created for the supply of materials for carrying the treatment into effect."

Sterilized Milk is becoming a popular hot-weather drink in this city.

A Political Honor to a Physician.—An esteemed correspondent writes from San José, Costa Rica, to inform us that Dr. Juan J. Ulloa, who was a delegate from Costa Rica to the Pan-American Medical Congress, and who is a graduate of the Medical Department of the University of the City of New York, has been appointed Secretary of State in the Departments of the Interior and of Public Improvements of Costa Rica.

Dr. V. P. Gibney has been elected Professor of Clinical Surgery in the College of Physicians and Surgeons of New York City.

Prize for an Essay on Tuberculosis.—At the Denver meeting, just closed, of the Colorado State Medical Society, the following resolution, offered by Dr. Denison, was carried, and Drs. Charles Denison, H. A. Lemen, and S. E. Sally were appointed as such Examining Committee: *Resolved*, That this Society offer a prize of $100 for the best essay upon the following subject: The Diagnosis of Tuberculosis by Microscopic Examination of the Blood.

Asparagus.—English journals have been actively discussing the physiological action of asparagus. The conclusion reached is that it is a diuretic.

The Caul still seems to have a commercial value. Witness the following advertisement in a New York daily: "Caul for Sale, reasonable. Address ———, box ——, *World*, uptown."

The American Electro-therapeutic Association will hold its fourth annual meeting in New York on September 25th, 26th, and 27th, at the Academy of Medicine. Members of the medical profession are invited to attend.

Society Reports.

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

AMERICAN GYNECOLOGICAL SOCIETY.

Nineteenth Annual Meeting, held at Washington, May 29, 30, and 31, 1894

(Continued from Vol. 45, page 769.)

SECOND DAY, WEDNESDAY, MAY 30TH.

President's Address.—DR. LUSK chose for the subject of his address "The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids." There is nothing, he said, which in an equal degree marks in gynecology the boundary line between the old order of things and the new, as the recent discussion upon the surgical treatment of uterine myomata. Myomata might remain of small size and produce no symptoms. When small and the symptoms were slight, the surgeon could delay a little and control attending menorrhagia by curettage, etc. The argument in favor of more radical measures because of the supposed liability of myomata to malignant changes, especially in patients nearing the climacteric, clinically had not much weight.

Gottschalk, Franklin, Martin, and others had had favorable experience in controlling the symptoms and growth of uterine fibroids in certain cases by tying the uterine arteries through the vagina. It seemed to the President unwise bigotry to ignore such testimony because ligation of the uterine arteries belonged to the domain of little things. Certainly the patient would prefer to be relieved in that way to having the uterus removed.

It was a question whether sufficient attention had been paid in this country to the large amount of efficient work that had been accomplished abroad in connection with the enucleation of fibroids by the vaginal passage.

Chrobak alone had reported forty-three cases, with but one death. The tumors were cervical, submucous, and interstitial, and varied in size from a child's head down. The President related one of his own cases of this kind, in which able men had said the tumor could not be removed except by opening the abdomen. After enucleation, entire or by morcellement, the uterus or cervix could be restored by plastic operation. It might seem a little thing, but women would prefer not to have the scar left by abdominal operation, and the danger of hernia was shown by the fact that, at Jacob's clinic, in 259 cases hernia occurred in 38. By the vaginal method better drainage was secured, and there was less shock. The results by the vaginal method were remarkable—Péan, 300 cases with only six deaths; Richelot and Doyen together, 88 cases with two deaths. When the tumor exceeded in size a child's head experience taught that, as a rule, it was advantageous to attack it from above.

Regarding castration for control of symptoms pertaining to fibroids the views of Martin, Leopold, Gusserow, Lawson Tait, on their statistics, were quoted to show that often the procedure gave a satisfactory result. Castration, however, was no longer advocated in large tumors and cystic tumors.

In all cases where the abdomen had been opened, the possibility of saving the uterus and appendages should not be lost sight of. All pedicled growths should be tied and removed.

The views of Polk and Martin, particularly, were referred to in the line of sparing the healthy tissue where it was necessary to remove disease of structure in the uterus and appendages. There would still, however, remain a certain number of cases in which, owing to the size of the tumor, cystic degeneration, number of growths, etc, it would be necessary after opening the abdomen to do total extirpation.

Dr. Lusk then passed to a consideration of methods of treating the pedicle. Although good results had been obtained from fastening it into the abdominal wound, the method had been abandoned; some patients returned with a fistula, etc. Complete removal and amputation, leaving the lower cervical segment only, were methods advocated by the best authority.

Discussion was then called for upon the papers of Drs. Lusk, E. C. Dudley, and Wathen.

DR. W. M. POLK thought also there could be no one method applicable to all cases of uterine fibroids. He favored conservative measures, retaining healthy structures, wherever removal of simply the diseased portions would be likely to terminate in cure. This remark was especially applicable in disease of the appendages, for even pus in the tubes did not necessarily preclude ovulation.

DR. BALDY thought that if myomectomy was to be done at all, it should be by the abdominal, not by the vaginal, method. It was, however, attended by danger of hemorrhage, sepsis, and recurrent disease.

DRS. CUSHING and GORDON also advocated total removal of the uterus, as opposed to myomectomy.

DR. W. GILL WYLIE believed in suiting the operation and the method of performing it to the particular case, and thought the President's paper presented the subject very justly.

DR. BYFORD expressed similar views, and Dr. Engelman regretted that some of the gentlemen had seemed to show prejudice against attacking any cases of fibromata uteri per vaginam, regardless of their size.

DR. A. P. DUDLEY related a few cases illustrative of the advantage of the different procedures under different circumstances.

Rupture of the Uterus; Palliative versus Surgical Treatment.—The discussion upon this subject was opened with a paper by DR. CHARLES M. GREEN, of Boston. He said: It is improbable that any authority at the present time would advocate any specific treatment as applicable alike to all cases of rupture of the uterus. The object of the discussion is rather to arrive at the methods most suitable for particular classes of cases, according to the condition and situation of the patient, the availability of surgical skill, the site and character of the rupture and manner of its production, the extent to which the child has escaped into the peritoneal cavity, the presence or absence of hemorrhage, the condition of the uterus as regards sepsis.

Surgical treatment should embrace, not alone laparotomy, with or without suture of the rent or removal of the uterus, but also the various methods of drainage with gauze, wicking, or tube, with or without antecedent irrigation; while palliative treatment included the various general therapeutic measures for sustaining the patient, relieving pain, and combating shock, combined with local antisepsis and natural drainage. The two were often advantageously combined.

To one with limited experience in abdominal surgery and severer obstetrical practice, the idea of laparotomy after rupture of the uterus was an attractive one, but extended experience could but convince that in many cases less radical measures gave better results.

Merz's statistics of 230 cases, grouped under ten heads, were given. Complete rupture, 181 cases, with 63 recoveries; incomplete rupture, 46, with 19 recoveries.

Dr. Green divided the cases of uterine rupture for purposes of treatment into three classes: 1. Complete or incomplete tears of the lateral or posterior walls of the lower segment, with adequate provisions for vaginal drainage, hemorrhage easily controlled, no intestinal hernia; such cases often recovered under palliative treatment, drainage, and antisepsis. 2. Complete tears of lower segment, or moderate tears of uterine body, more or less blood-clot, etc., having entered the peritoneal cavity; treatment might be by peritoneal irrigation and drainage

with gauze. 3. Cases in which extraction of child through pelvis is impossible or inexpedient, hemorrhage uncontrollable per vaginam, rent extensive, irrigation, transverse, or ragged; in such cases abdominal section is indicated. The propriety of suturing the rents must be decided according to the condition of the uterus and the edges of the tears; when the latter are very ragged and infiltrated with blood, when the uterus is friable and apparently septic, hysterectomy promises better results than suture.

The Palliative Treatment of Rupture of the Uterus — Dr. Malcolm McLean, of New York, read a paper with this title.

One of the most constant and characteristic phenomena connected with rupture, the author said, was sudden recession of the presenting part. After strongly protesting against one allowing himself to be led by modern radical tendencies in surgery to operate in all cases of rupture of the uterus regardless of the particular conditions present, the field for palliative measures was pointed out and an illustrative case cited. The hand was introduced, the child was found, escaped through a rent in the right anterior wall of the uterus, so that only the head and right arm were within the uterine cavity. In examining the edges of the wound it was noticed that the surfaces were completely shielded by the amniotic sac, which was pushed through ahead of the limbs of the child, forming a hernial sac into the peritoneal cavity. Without any difficulty the child was drawn back into the uterus and at once delivered by the feet. The placenta with the membranes were withdrawn, and a considerable quantity of amniotic fluid, meconium, etc., was brought away in the pouch of the amnion which had protruded through the rent in the uterus. Believing that the peritoneal cavity, therefore, had not been invaded except by purely blood extravasation, the case was left to nature, using, of course, antiseptic douches, etc. The woman made a good recovery after a somewhat tedious convalescence while absorbing a considerable hæmatocele in the right side of the abdomen.

A year and a half later Dr. McLean delivered the same patient, and the cicatrix was distinctly felt through her very thin abdominal parietes.

Stress was placed upon the fact that the amniotic sac had protruded into the rent and protected infection of the peritoneal cavity.

The President, Dr. Lusk, being requested to speak, said he believed that all reported cases of rupture of the uterus through the anterior wall had terminated fatally. When the rupture was complete, but the child only partly extruded, a small proportion of the mothers had recovered under vaginal extraction and subsequent drainage, but unfortunately nearly all of them had afterward been hopeless invalids. Therefore, if the rupture were completely into the abdominal cavity, and the woman was not moribund, he would feel safer on returning home if he had opened and cleansed out the abdomen, and either sewed up the rent or removed the uterus according to the case.

Dr. Reynolds, of Boston, would not agree with the President that patients who recovered after palliative treatment were hopeless invalids, as out of four cases of rupture of the uterus seen by him only one died, three recovered, and, under palliative measures were healthy subsequently.

Dr. E. C. Davis thought the thick uterus in multipara which had ruptured was likely to be friable, very susceptible to infection, offering little hope of union by suture; therefore removal of the organ seemed preferable.

Dr. W. M Polk said he felt, when brought before a case of rupture of the uterus, that he was between the devil and the deep sea—that is, death of the patient from sepsis if he did not operate, and death from added shock if he did. Usually there was already a state of collapse which forbade a formidable operation. Owing to the fact that operations per vaginam caused not more than a third the amount of shock attending approach by the abdomen, one should, if possible, ligate the vessels from below, and close the lower uterine rent at least, or perhaps do hysterectomy from that direction.

Dr. R. W. Murray, of New York, related four cases of rupture of the uterus, the last one seen with Dr. Coe—profound shock, laparotomy, death. This case showed that removal of the uterus (which was not undertaken) might prove extremely difficult, if not impossible, owing to the great thickness, œdema, and vascularity of the tissues. Two cases seen in private practice recovered under palliative treatment. If there was no doubt of rupture into the abdomen he thought it best to resort to cœliotomy.

Third Day, Thursday, May 31st.

The Influence of Laceration of the Perineum on the Uterus and the Operation for its Repair.—Dr. W. Gill Wylie, of New York, made the following points in this paper: The main forces which act on the contents of the abdomen are the muscles, the diaphragm playing the principal part. When we wish to keep the abdominal contents quiet, the diaphragm and abdominal muscles are contracted. The axis of the uterus is normally in line with the forces bearing upon it from above. When it is displaced backward or forward those forces strike it broadside and act much more powerfully in displacing it. The axis of the rectum is at right angles to that of the anus, so that when the rectum is full it shuts the anus. The force which most influences the pelvic organs is straining at stool. The perineum tends to keep the anus in shape with relation to the rectum. Destroy the perineal support of the rectum and the straining at stool will force the rectum forward, carrying the vaginal walls before it, producing so called rectocele. In repairing the perineal injury Dr. Wylie made it one of the special objects to tilt the so-called rectocele backward and bring up the depressed sulci, or angles on either side over the rectocele. It differed from Dr. Emmet's operation in one regard at least, that is, the area of denudation was solid, whereas in Emmet's a central portion was left undenuded. The external sutures, extending to the normal place of the hymen, did not exceed four in number, the internal or those above that point being about the same in number and of silver wire. They were left in three weeks, in order to give full time for union to occur in the white fibrous tissue where the lesion had existed long enough for muscular fibres to disappear. If the central portion of the area of denudation were left untouched it would not prevent return of the rectocele. Where there was rectocele there were also hæmorrhoids; hence the necessity for treating these and of stretching the rectum, a procedure which he believed was commonly omitted, accounting, in part, for many failures.

The paper was discussed and criticised by Drs. Noble and Skene. The latter thought no one procedure adapted to all kinds of tears.

The Ultimate Results of Retro-displacement of the Uterus by Pessaries, with Special Reference to Alexander's Operation.—Dr. Francis H. Davenport, of Boston, read this paper. The conclusions reached were, that in cases of uncomplicated retroflexion or retroversion the choice of treatment lay between the use of the pessary and shortening the round ligaments. Where the former was decided upon a cure could be expected in about twenty-five per cent. of the cases. Where a cure was effected by pessaries it was usually within a year or a year and a half after beginning treatment. A large proportion of the patients not cured could still wear a pessary without discomfort and did not wish an operation. The Alexander operation should be limited to those cases in which a pessary could not be worn and those preferring it to the support; to cases in which vaginal support was inappropriate; also as supplementary to other operations.

Dr. Cushing thought the paper a very judicious one, although he must differ from some of the conclusions, He did not think statistics upon cures effected by pessa-

ries of any value in the past. He believed with the reader, that there were few cases of backward displacement which could not be rendered quite comfortable or cured by pessary, or else there was a complication which rendered treatment by the Alexander operation inappropriate—usually some adhesive band. Therefore in a large proportion of cases where pessaries were not successful it was best to open the abdomen and discover the cause, rather than do Alexander's operation.

Dr. Clement Cleveland had had very good success with the retroversion pessary. If a permanent cure could be effected by it, it would usually take place within a year. At the end of that time he allowed the patient to decide whether she preferred an operation, and if the case were a suitable one and the round ligaments were shortened by a correct procedure success would follow in at least seventy-five per cent. of the cases.

Dr. G. M. Edebohls, of New York, had had less success in the cure of backward displacements of the uterus by pessaries than had been claimed by some other gynecologists, and since his success with shortening the round ligaments by the method employed by him had been practically uniform he always resorted to this or else let the patient go elsewhere for treatment by the pessary. A number of these had returned, having tired of wearing the support although it gave no special discomfort; then shortening the round ligaments, he had sent them away permanently cured. Of course he was assuming that the cases were suitable ones for treatment by either of these methods.

Dr. Gehrung thought the percentage of cures by pessary was greater than had appeared from statistics, for the reason that, when recurrence of the displacement had taken place some time after leaving off the use of the pessary, the case had always been placed among the failures, whereas it might in reality have been a cure with recurrence due solely to renewal of the cause. While the pessary might not give that positive result produced by fixation, it was at least free from the unnatural state left by this.

Dr. Dickinson, of Brooklyn, impressed the fact that a permanent cure of uterine displacement could not be expected so long as women continued their faulty modes of dress and occupations which involved an unnatural position of the body, especially of the abdominal and pelvic organs, and destroyed muscular tone.

Inflammation of the Ureters from a Medical Standpoint.—Dr. M. D. Mann, of Buffalo, read a paper, considering in a systematic manner inflammation of the ureters, its pathology, causation, treatment, etc. His knowledge of inflammation of the ureters began only a few years ago when Dr. Kelly, of Baltimore, called attention to the condition; while the disease was still scarcely mentioned in the text-books, he believed it was common and was of great importance. Among the causes he first mentioned injuries during childbed and related a case. Of ascending ureteritis from bladder trouble, he had never seen a case except of gonorrhœal origin. Yet gonorrhœal cystitis in women did not often attract attention. It was probable that it might lurk in the ureters after it had ceased in the bladders, for the reason that treatment was commonly limited to the bladder in gonorrhœal inflammation which had extended to this organ or higher. Dr. Mann did not doubt but what failure to relieve pain after cœliotomy was often due to unrecognized gonorrhœal inflammation of the ureters. Where the ureteritis was due to inflammation extending downward, the cause, according to his experience, was nearly always the presence of renal calculi or renal tuberculosis. He believed that symptoms attributed to pressure upon the bladder by displacement of the uterus were commonly due to an abnormal condition of the urine and its influence upon the ureters.

Pressure was recognized by all writers as a cause of ureteritis, and the author thought no one would doubt but what a fibroid tumor of the uterus, an ovarian tumor, and even cancer of the uterus might exert sufficient pressure upon the ureters to cause inflammation. But an abnormal condition of the urine was, in the author's opinion, the cause of the great majority of cases. In many the urine was excessively acid and also scanty. While containing a variety of crystals, the total solids were apt to be below normal. It was sometimes called the condition of lithæmia, and was frequently brought about by reflex neurosis affecting the digestive organs, and sometimes by certain foods, strawberries being among those which acted obnoxiously in some people. Tuberculosis of the ureters had been occasionally recognized.

The diagnosis rested upon the symptoms, the examination of the urine, which should be chemical and microscopical, and upon palpation and inspection. In many instances the ureters could be felt thickened, and on inspection, which could easily be made by Kelly's method, in the area about the vesical openings of the ureters might be found the seat of granulations or ulcers, irritation of which by the abnormal urine caused vesical tenesmus.

The treatment was constitutional, local, and symptomatic. Constitutional treatment was specially important. Diet should be corrected, the urine should be rendered alkaline and increased in quantity, and diaphoresis induced at the beginning. Sandal wood had had a valuable influence through the urine, also some other agents often given internally in gonorrhœal urethritis. As to surgical treatment, the author had a few times catheterized and dilated the ureters, but without special result. Granulations about the mouth of the ureters could be treated locally. Ureteritis was apt to affect both canals, but one more than the other.

Drs. Baldy, A. P. Dudley, Willis Ford, Cushing, and the author participated in the discussion. Dr. Baldy had seldom found ureteritis, and thought it must be a rare condition.

Symphyseotomy Versus the Induction of Premature Labor.—Dr. C. P. Noble, of Philadelphia, read this paper. Three questions were propounded: 1. Is embryotomy upon the living child and deliberately selected a justifiable operation? 2. Is it justifiable in labors not among cases of contracted pelvis, yet in which there is considerable obstruction making such violent efforts at version or forceps necessary as to threaten mother and child, instead of resorting to symphyseotomy? 3. In contractions of moderate degree is it better to induce premature labor sufficiently early to permit of bringing forth a living child, or to let pregnancy go to term and resort to symphyseotomy, should this prove necessary?

Regarding the first question, craniotomy on the living child, Dr. Noble thought it had been answered in the negative. The problem was not to save the mother alone, but to save both mother and child by a procedure which gave hope of diminishing the mortality of both to that of the mother alone where craniotomy was resorted to. Dr. Noble also thought the second question would in the future be answered in favor of symphyseotomy, but he did not pretend to express anybody's opinion but his own.

In answering the third question it was necessary to consider the mortality of mother and child in premature labor compared with that in symphyseotomy. The general mortality to the mother in premature labor had been given as five per cent.; in symphyseotomy as ten per cent. Dr. Noble believed, that in both the figures were entirely erroneous. Five per cent. was undoubtedly too high a maternal mortality in induction of premature labor for contraction; it should not be higher that one per cent. in good hands. Ten per cent. mortality for the mother under symphyseotomy was also entirely too high, as it represented the results in all cases, and it was well known that the operation was likely to be put off until the mother was in very bad condition from use of forceps, etc. In order to compare the safety of the two procedures only those cases of symphyseotomy should be included in which it had been an elective operation, resorted to before injuries had been inflicted by forceps,

etc. The maternal mortality from symphyseotomy under favorable circumstances should be very low. The advantages to the child over premature labor were striking, for many premature children died at birth, and many more succumbed afterward. The author narrated a case which he had reported before, the first one in the world in which symphyseotomy had been resorted to in preference to premature labor, and the first one in the United States in which the patient had submitted to a second symphyseotomy at a subsequent pregnancy.

The views of the author were substantially agreed with by Drs R. W. Murray, Charles Jewett, Engelman, and Malcolm McLean.

Officers: Dr. M. D. Mann, of Buffalo, was elected President; Dr. H. C. Coe was re-elected Secretary. The date of the next meeting will be the fourth Tuesday in May, 1895. Place yet to be decided upon.

AMERICAN SURGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 800)

THIRD DAY, THURSDAY, MAY 31ST.

The Surgical Treatment of the So-called Surgical Kidney.—DR. R. F. WEIR, of New York City, read a paper on this subject. He reported the case, he said, in order to show that the prognosis is not always as bad as we hitherto thought it. The case was that of a young man who had an attack of pneumonia some four years ago, followed by scarlet fever and nephritis. Albumin and casts persisted, and he never regained his health.

Two months ago he had an attack of urethritis. Gonococci were present in great numbers. It subsided under treatment of creoline, silver nitrate, and zinc sulphate solution. Twelve days prior to his admission to the hospital, without any assignable cause, he had a chill, preceded by a temperature of 101° F., with vomiting and diarrhœa. The next day he had pain in the loins, which was thought to be lumbago, but on the next day there was great tenderness over the right kidney.

During the seven days between his admission to the hospital and the operation, he had four chills, with temperature ranging from 103° F. to 105° F., pulse 116 to 120. He passed fifty to sixty ounces of urine daily. It contained pus. It was thought enlargement of the right kidney could be made out, but I thought it was an abscess. I did not think he had the ordinary condition known as the surgical kidney.

Operation.—An incision was made and the kidney exposed. It was twice its ordinary size. It was deeply congested and swollen, particularly on its inferior surface. Puncture with the aspirating needle gave no indication of pus, but an incision revealed the nature of the disease. It disclosed numerous miliary abscesses. The kidney was rapidly removed and the wound packed with iodoform gauze.

Result.—Immediately after the operation the temperature dropped from 105° F. to 99° F., and then remained subnormal for a few days. The patient made a rapid recovery, and was discharged from the hospital three weeks later. At the time of his discharge the urine was nearly normal, and no treatment was advised beyond spending as much time in the open air as possible.

How often Does such Unilateral Renal Trouble Exist?—The first question this case would naturally suggest to all surgeons, is how often may such a fortunate condition of affairs be found in cases of surgical kidney? That this form of nephritis is sometimes limited to one kidney, is beyond doubt. The statistics of one man show that out of one hundred and thirty cases of surgical kidney, nineteen were unilateral. From the hospitals of New York, out of seventy-one cases of miliary abscess, both organs were affected in fifty-nine, and only one organ in twelve cases, or about twenty per cent. of these cases, might have been treated successfully.

Future Prognosis.—The speaker could not help feeling more hopeful in the treatment of these cases than in the past. Even where both organs are involved, something should be done in the way of evacuating the pus. Where the patient's condition warrants it, and especially when there are symptoms pointing to one side, it is justifiable to make exploratory incisions on one or both sides.

Surgery of the Ureters.—DR. CHRISTIAN FENGER, of Chicago, read the paper.

Discussion.—The papers read by Drs. Tiffany, Weir, and Fenger were discussed together.

DR. RICHARDSON, of Boston, said the examination of the urine prior to operation was most important, as it was often the deciding point in doing operations which were not absolutely necessary. In removing a kidney he would prefer to go through the abdomen, which gave you a better opportunity to avoid or control hemorrhage. The incision should be large enough to permit the examination of both kidneys. This would also avoid the danger, in unilateral trouble, of removing the only kidney the patient might possibly have.

DR. MUDD, of St. Louis, thought the low temperature and the quantity of urine passed to be a better indication than albumin or casts. He also thought as much of the kidney as possible should be saved, as the kidney had great reparative power; also, that it was disastrous to remove the kidney immediately after an injury, before the patient had recovered from the shock of the accident. He thought it was very difficult to determine by handling whether you had good kidney material or not. He did not approve of the abdominal incision, unless you were in doubt about the other kidney, as hemorrhage could be controlled just as well from behind.

DR. NANCREDE was opposed to the abdominal operation, owing to the danger of infection from the pus which might possibly escape into it. He insisted upon being sure the patient had two kidneys before removing one.

DR. CARMALT, of New Haven, said in searching for both kidneys you should bear in mind the abnormal positions which may exist. In one post-mortem case he found the left kidney low down in the pelvis, and in this case a possible mistaken diagnosis of one kidney might have been made.

The paper was further discussed by Drs. Prewitt, Deever, of Philadelphia; Gaston, of Atlanta; Fenger, of Chicago; and Forbes, of Philadelphia. The last-named gentleman exhibited an indigo stone weighing one hundred and forty-seven grains, with the interesting statement that the patient had no renal symptoms, showing an unusual tolerance by the kidney of such a large foreign body.

Treatment of Malignant Tumors with the Toxines of Erysipelas.—DR. WILLIAM B. COLEY, of New York, read the paper. He began this treatment of multiple sarcoma by repeated injections of living cultures of erysipelas streptococci in 1891, and gave the account of ten cases. Six were sarcoma and four carcinoma.

In four cases erysipelas was produced, but the marked improvement in the cases where erysipelas was not produced led the speaker to believe that the curative action was due to the toxines, rather than to the germ itself.

In 1892 he experimented with bouillon cultures prepared by heating to 100° C., and the effect was slightly less than when living cultures were used.

Early in 1893 he began using cultures filtered through porcelain without subjecting it to heat. The toxines of the bacillus prodigiosus prepared in the same way were used in conjunction with the erysipelas toxines which intensified the action of the erysipelas toxines on the sarcoma, and was much more effective than that of the erysipelas toxine alone.

Toxine Must be Fresh.—The toxine to be of value must be freshly prepared from very virulent cultures. All successful cases were from cultures made from fatal cases of erysipelas.

Results.—Of twenty five cases of sarcoma treated, six were cured without any recurrence; nine showed marked

improvement; eight, improvement slight; and two, no improvement.

Of eight cases of carcinoma, all but one showed more or less improvement, and in three cases the improvement was marked.

The diagnosis of all these cases was established by eminent surgeons and pathologists.

How do the Toxines Cure?—No rational explanation of the action of the toxines on malignant tumors can be offered, except on the assumption that such tumors are of micro-parasitic origin. Admitting this theory, explanation would be easy, viz.: antagonistic bacterial action.

The following were the conclusions of the paper: 1. The curative action of erysipelas upon malignant tumors is an established fact. 2. The action is more powerful upon sarcoma than carcinoma. 3. The action is chiefly due to the soluble toxines which may be isolated and used with safety and accuracy. 4. The action is greatly increased by the addition of the toxines. 5. The toxines, to be of any value, must be fresh and from virulent cultures. 6. The results obtained from toxines, without danger, are nearly so, if not quite, equal to those obtained from a fresh attack of erysipelas, and inoculations should rarely be resorted to.

Dr. Keen, of Philadelphia, had treated seven patients in the same way and manner, but in not one of these cases had there been even an arrest of growth. He had obtained reactions as high as 103° to 104° F., while in some cases no reaction took place. He injected in the tissues in some cases, and directly into the tumor in others.

In one case there was a breaking down of the growth, but when the use of the toxines was discontinued, the case went on rapidly. He had never seen any harm done further than the rise of temperature. As his experience with the toxines had been limited, he could not hope to obtain as good results as Dr. Coley.

Dr. Park, of Buffalo, had inoculated cases with erysipelas from patients in the hospital wards, without results. He got some culture from Dr. Coley, but the results were no better than those obtained by Dr. Keen. He thought it a case of different men working in the same manner and obtaining different results, the most experienced getting the best results.

Dr. Warren's experience was similar to that of Drs. Keen and Park, but thought the subject should be encouraged in every way, and conclusions should not be jumped at. The question of the character of the reaction he thought an interesting one. It was thought, where the injection was in the tissues, a fatty degeneration of the cells of the sarcoma took place, but when the tumor was injected it was a necrosis. It should also be remembered that all the cases were selected as inoperable.

Dr. Richardson stated that one of the successful cases was sent by him to Dr. Coley. In this case there was no doubt whatever about the nature of the disease, and without this treatment the patient would have died. The case was a perfect cure.

Venous Tumor of the Diploë was the title of a paper read by Dr. L. S. Pilcher, of Brooklyn.

History.—The patient, a girl, fifteen years of age, at the age of five, fell, striking on the top of her head. In a few days afterward a small, soft swelling appeared, gradually increasing in size, causing no pain or tenderness. At the end of five years it was lanced and a small quantity of blood evacuated. The swelling immediately refilled. It was lanced again in a few years afterward, with similar results. Nothing further was done until her admission into the hospital.

When admitted she presented a tumor over the anterior fontanelle. It was covered with a thin skin, devoid of hair, and of a bluish hue. It was soft and fluctuating, and diminished slightly under pressure. It had been enlarging and was on the point of bursting.

Operation.—On March 14th the tumor was incised. It consisted of a small blood-clot and fluid blood. The tumor was fed by several channels leading from the veins into it. Hemorrhage was controlled by pressure and tampons. The entire cavity was thoroughly curetted and tamponed with gauze, and the opening sutured.

The interesting feature of this case is the fact that it was not a dilatation of any blood-vessel, but a true traumatic tumor; being an adventitious blood-space fed by channels from the blood-vessels.

Strangulation of Meckel's Diverticulum.—Dr. J. W. Elliott, of Boston, reported the case. The interesting features were the symptoms presented by the patient, all of which pointed to appendicitis. Under manipulation a large, hard mass was felt in the abdomen. A vertical incision was made in the abdomen, and the appendix found to be normal, and the true nature of the trouble revealed. The patient subsequently died from septic peritonitis.

The paper was discussed by Drs. C. Fenger, of Chicago; Tiffany, of Baltimore; and White, of Brooklyn, N. Y. In the discussion attention was called to the fact that a tumor near the umbilicus should direct attention to the diverticulum.

The Removal of Stone in the Bladder.—Dr. W. S. Forbes, of Philadelphia, read a paper on this subject and presented a new lithotrite. Given the problem of a stone in the bladder, a limited viaduct through which to reach and remove it without injury to the parts, we have two unknown factors, viz.: the crushing resistance of the stone, and the strength of the lithotrite.

Crushing Resistance — How Obtained. — The exact crushing resistance of a stone has never been stated by any writer, except in vague terms, as tough, etc. The same may be said of the description of the strength of the lithotrite, as strong, powerful, etc., all of which mean anything and nothing.

In order to attain the necessary knowledge in the question, it is necessary to measure the crushing resistance of a large number of stones taken from the human bladder. The conditions of science should be weighed, as it were, in the fine scales of the jeweller. A very large number of stones were tested in the lithotrite, which was placed in and worked by a very powerful machine, so delicately and accurately constructed and adjusted that every ounce of force applied in crushing the stone was recorded.

The New Lithotrite has all of the elements contained in the Bigelow and Thompson, but the construction and general lines of it, however, are entirely original and widely different from any lithotrite now in existence. The penile and vesicle ends consist of a male blade sliding within a female blade and held within the latter by a slightly angular undercut slot. This prevents the male blade rising out of the female blade when under a strain. The greater the strain the tighter it is held.

The long axis of the shaft is straight to within two inches of the crook or curve, and here rises to an angle of about three degrees until it meets the curve. This accomplishes six important objects: easy introduction of the instrument over the urethra; increases strength of female blade by giving it support higher up; allows a larger stone being grasped without incurring a longer female blade; places the metal of the female shaft where it is most needed; prevents side movement or twisting of the male blade by giving it a deeper slot to move in, thereby supporting it higher up; the angle between the female blade and the long axis of the shaft is the same as if the shaft was straight all the way to the curve; the female blade has its proximal surface concave and prevents calculus slipping out when the power is applied, and tends to give strength to the instrument; it is elliptical and uniform in size to within three inches of the crook, and here increases slightly in calibre until it reaches the maximum, which is at the crook, giving great strength to the female, where it is most needed, and places the extra metal within the bladder and prostatic portion of the urethra, where it is easily accommodated.

The shoe of the female blade is larger than the male blade, so that all débris is expelled and impaction of the instrument is prevented, and the wall of the bladder pro-

tected from being cut or pinched. The female blade is elliptical, giving thick septum, without increasing the calibre of the shaft. The female blade is made thin fore and aft, taking up less room in the bladder. The proximal surface of the female blade is in the form of a wedge of about forty five degrees, in order to penetrate the calculus with the least power of propelling force. The cross ridges on the proximal surface of the male blade prevent the stone flying when broken, and the parallel spillways permit the débris to escape without causing impaction of the instrument. The spur rises to a greater height on the male blade, to give it greater strength. This spur interferes in no way with the holding of the stone, if it does not touch it. The great breadth of the septum of the female blade is permitted by the elliptical shaft.

Handle or Screw Mechanism.—The handle or screw mechanism is of the interrupted screw type. It consists of the internal screw throughout the barrel having the threads cut away for the entire length of the barrel at alternate spaces of ninety degrees each.

The screw barrel has an end movement in the cylindrical barrel of about one-sixteenth inch. Working in this barrel is a pair of screw blocks with interrupted screw threads alternating spaces of ninety degeees each, so that they may slide up and down the barrel without engaging, but by turning the handle they engage immediately. One screw block is rigidly keyed to the screw handle shaft, and the other so formed that it has a motion of ninety degrees around the handle shaft. When turned to the right it locks or engages. When the calculus is crushed, the instrument may be unlocked simply by turning the handle to the left until it stops, which is never more than half a turn.

Owing to the one-sixteenth inch play of the screw barrel, the cylindrical handle readily adjusts itself to engage the threads of the screw block, and the calculus is, therefore, never dropped, in order to locate the instrument.

Slow Thread.—The screw thread is made slow to increase the crushing strength and for the important factor of time. A certain pressure may be applied to a stone without crushing it, which, if allowed to remain acting upon the stone for a short time, will crumble it without further pressure, and thus the instrument is not unduly strained. The screw handle is larger than the ordinary one. It is made of very thin sheet metal; strong and light as the lightest handle now employed.

The instrument has broken one hundred and fifty-eight calculi, of various shapes, sizes, and degrees of hardness in the testing machine, and been subjected to a pressure of five hundred pounds between the blades thirteen times. Its ultimate strength after this trying ordeal was six hundred and fifty pounds. Moreover, after this enormous pressure, the instrument was closed and could have been introduced and withdrawn from the living human bladder with ease, and without injury to the parts.

Extirpation of the Larynx.—Dr. W. H. Carmalt, of New Haven, read a paper with this title, dealing chiefly with the after effects. He operated with the idea of doing away with the opening into the mouth. Many had doubtless seen the case of a man whose larynx was taken out, who was afterward able to sing and speak; and this, without any communication between the mouth and lungs. The opening of the trachea being directly above the sternum. The man swallows a certain quantity of air and makes a little puffing around the trachea; holding this for a few moments he is enabled to speak. He is able to count up to twenty when he stops and refills his mouth with air. In the speaking case, it was determined to close the upper opening in extirpating the larynx.

History of the Case.—Two years ago the man complained of hoarseness. Examination revealed only a swelling of the right vocal cord. He passed out of observation until four months before the operation, when he again came under observation with a distinct swelling of the vocal cords and the parts above. He again passed out of observation until about two weeks before his admission to the hospital, when he was threatened with suffocation.

The attacks of dyspnœa, under local applications, became less until after five days, when he had an attack of dyspnœa one night that required tracheotomy to prevent death. His symptoms subsided, and we were able to wait and prepare for the necessary steps of the operation.

Operation.—The entire larynx was involved with a cancerous growth which extended to the trachea, which condition was not revealed by the laryngoscope.

The entire larynx, together with the first ring and upper half of the second and third rings of the trachea, were removed and the opening into the mouth closed. The epiglottis was not removed.

Result.—The day following the operation he was able to swallow his food.

The operation was performed on the 5th day of April, and his recovery has been uninterrupted. He is achieving a voice, though it is a poor one. He is able to whisper.

The principal object of this paper is to call attention to the fact that an artificial larynx is unnecessary.

Dr. Forbes called attention to the patient who had been operated upon in Philadelphia, and said the patient's ability of speaking was due to his ability of keeping the air in his throat, on the same principle as the Scotch bagpipe; and by practice he will improve in both length and quality of speech up to a certain point. He cannot vary his voice, such as elevate or depress it. The note is no more than the same as the bagpipe; a monotonous drone, but it is superior to an artificial larynx.

Dr. Hingston, of Canada, said one man had his tongue removed, and could speak; another had his jaw removed and could speak; and now here is a man without a larynx and also able to speak. He thought it difficult to say which was the principal organ of speech.

The President closed the session with a short farewell address, and the meeting adjourned until its next annual meeting, to be held in New York in the spring of 1895.

The following officers were elected for the ensuing year: *President*, Dr. F. S. Dennis, of New York; *Vice-Presidents*, Drs. D. J. R. Weist, of Richmond, Ind., and J. B. Roberts, of Philadelphia; *Secretary*, Dr. M. H. Richardson, of Boston; *Recorder*, Dr. DeForrest Willard, of Philadelphia; *Treasurer*, Dr. N. P. Dandridge, of Cincinnati.

AMERICAN PEDIATRIC SOCIETY.

Sixth Annual Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, p. 770.)

Third Day, Thursday, May 31st.

Dr. F. Forchheimer in the Chair.

The Nutritional Element in the Causation of Neuroses.—Dr. Christopher, of Chicago, read a paper with this title. He began his remarks on the triad of hereditary, anæmia, and local reflex causes, as given by Rachford. But as neuroses often occur in those not anæmic, *i.e.*, oligo-cythemic, the term malnutrition is preferable. The chemical composition of the nutritional supply may be at fault.

As a definition "a neurosis is a group of phenomena resulting from abnormal action or nutrition." It may be due to: 1, Chemically abnormal nutrition; 2, physically abnormal, as heat or cold; 3, a toxine; or 4, occur under improper trophic influences. Such tissue starvation may be due to deficient quantity of nutrition or a food incomplete in parts of its composition, *e.g.*, fat-starvation = rickets; starvation of salts = scorbutus.

Not all proteids are equally available in digestion, but milk gives several, all of which are readily convertible. Complete and incomplete starvation of tissue may coexist. Hence we have physiological starvation. We may

also have pathological starvation from syphilis, tubercle, etc.

The author counts the sweating of rickets a neurosis of fat-starvation. Under heredity he says, atavism, morphologically, is of no account, but chemically it gives rise to clashing of functions resulting in lithæmia, for example. Neuroses are due to perverted action, but as this may occur in various tissues, the term "histoses" is suggested.

Dr. Rotch endorsed the conclusions regarding fat-starvation and said that he was making careful analyses of the salts of milk, which he hoped would prove of much value in our understanding the management of rickets and scorbutus.

A Case of Cyanosis.—Dr. William P. Northrup, of New York, exhibited the heart of a case of congenital cyanosis, which lived to four and a half years notwithstanding severe attacks of measles and pertussis. The heart showed a narrow pulmonary artery, an opening between the right ventricle and auricle, and hypertrophy of the right ventricle. The cornus arteriosus was obliterated, the foramen ovale closed. As symptoms the child had the typical sluggish peripheral circulation, clubbed fingers, constant dyspnœa, and a purring thrill over the base of the heart with a systolic murmur in the left third interspace. The trouble appeared due to early fœtal endocarditis.

The question for discussion was whether cyanosis, a symptom, should continue as a name for a disease. Most of those present seemed to favor calling such cases malformation of the heart, abandoning the term "cyanosis."

Nomenclature of Diseases of the Mouth and of the Gastro-enteric Tract.—The committee on revision of this subject presented its report through the chairman.

The report was adopted, and will appear in full later in the *Archives of Pediatrics*. The idea in the revised nomenclature is to eradicate old and useless names, and to adopt a nomenclature such as will enable men in different parts of the world to understand what each is writing about.

Election of Officers.—The following officers were elected: *President*, Dr. F. Forchheimer, of Cincinnati, O.; *First Vice-President*, Dr. Lewis Starr, of Philadelphia, Pa.; *Second Vice President*, Dr. August Seibert, of New York City; *Secretary*, Dr. Samuel S. Adams, of Washington, D. C.; *Treasurer*, Dr. C. W. Townsend, of Boston, Mass.; *Recorder*, Dr. Dillon Brown, of New York City; *Member of Council*, Dr. B. K. Rachford.

The Early Diagnosis of Pott's Disease.—Dr. Dillon Brown, of New York, then presented a long and thorough study of "The Early Diagnosis of Pott's Disease of the Spine in Children." The author went carefully into the differential points between this disease and others simulating it, or remotely connected therewith. He cited many cases in which the patients had been treated for dyspepsia, peritonitis, cold abscesses, rheumatism, paralysis, etc., the real lesion remaining long unrecognized or being only found upon autopsy.

On the other side, cases were recorded having a diagnosis of spinal caries, which proved to be sarcoma of bone, a glioma of cervical medulla, and the like. As nearly all these cases were reported by men of large experience, it shows the necessity of great care and exactness in diagnosis as well as treatment. The disease is now recognized as a chronic tubercular lesion of the vertebra, and as ninety per cent. of cases occur in childhood, we must be on our guard. The presence of syphilis or traumatism as a cause must be sought for. Rheumatism is to be excluded by treatment if the symptoms are uncertain.

Fourth Day, Friday, June 1st.

Infantile Myxœdema.—Dr. William P. Northrup, of New York, read the paper, which was a preliminary report of two cases being treated by thyroid extract. In future further account will be given of their progress. The first, a girl, nine years of age, was of good family history, the parents non consanguineous. She had lived in Ohio and Pennsylvania. She had grown none since nine months of age, and had but fourteen deciduous teeth. She presented the usual characteristics of cretins, puffy look, parchment like skin, flat nose, swollen tongue, protuberant belly, and umbilical hernia. She could say only one word, but was of lively disposition. This child was treated for eighty days with glycerine extract of sheep's thyroid. The dose, one minim, three times a day, increasing a minim a day until the temperature remained at 100° F. At the end of eighty days the child was much improved, taking more food, and having a brighter countenance.

The second case was twelve years of age. The same treatment was employed, but the results were less marked.

Successful Treatment of Infantile Myxœdema.—Dr. Osler, of Baltimore, then read a paper with this title.

Case I. was a boy, aged four years and eight months, who took one quarter of the thyroid gland of a sheep each twenty-four hours. After a time this was administered desiccated. In fourteen months the boy grew four inches, an unusual increase. He now walks and runs about, and has gained so much mentally that few would think him "queer." The myxœdematous appearance is all gone.

Case II. was a male, aged nineteen, who made no material gain, partly because treatment was omitted for three months.

The third case was lost track of.

In discussion Dr. Carr referred to Dr. Crary's case, which is growing rapidly and gaining mentally.

Dr. Forchheimer related three cases under his observation. In the first patient, a boy, aged nineteen, the thyroid extract had to be discontinued because of the maniacal excitement it produced. A second case, aged eleven months, is improving on the extract. In Case III., aged four years, there is no change. The treatment gives promise of benefit, therefore, but is not a certain cure.

Acute Pyelitis in Infants.—Dr. L. Emmet Holt, of New York, read a clinical paper on the above topic. Acute pyelitis may follow any other acute disease. Case I. was a child, eight months old, nursed. It suddenly had a temperature of 103.5° without any discovered local cause, pneumonia was suspected. The urine was collected in a two ounce conical glass and showed three quarters of an inch of pus and a trace of albumin; there were no casts, nor was any treatment instituted. The child is now well.

Case II. was a female child, aged eight months, who had been nine days ill. The temperature ranged from 103° to 106° F. Symptoms all negative but pneumonia suspected as before. On the eleventh day the urine showed pus and albumin with bladder epithelium, but no casts. There was no dropsy. Two days later the urine contained eight per cent. of pus. The child took twenty grains of citrate of potash daily, and in three weeks all pus had disappeared.

Case III. was aged nine months; previously never ill. The child had repeated chills in one day and a temperature reaching 104° F. in the rectum. Between chills the temperature would fall to normal and all appear well. Two grain doses of quinine were given every three hours. On the fourth day the child took fourteen grains of quinine. Little urine was passed, and that with pain. It contained one-fifth pus and a little albumin; specific gravity, 1.012. On the sixth day sixteen ounces of urine was passed without irritation of the bladder. However, the child took but half its usual amount of food. The irregular fluctuations of temperature continued and a few granular casts were found in the urine. Although the spleen was at no time enlarged, Dr. Ripley, the consultant, advised more quinine hypodermically. Eighty grains were thus administered in seventy-two hours without bad effect. The chills and fluctuation of tem-

perature were stopped. Lithia water and hot fomentations were used as treatment. The urine now was alkaline in reaction, sp. gr., 1.007, contains albumin, 3.6 grains of urea per day, a few red and many white blood-cells, with bladder epithelium.

In review the author noted that the first case was mild and recovered without treatment. The second case had a temperature about 105° F. for twelve days, not affected by quinine. Though the temperature was higher there was little prostration. This case occurred during the influenza epidemic, and had no suspicion of malaria about it. The etiology of Case III. is doubtful; was it septic or malarial?

Dr. Osler mentioned a case, three years of age, who had recurring chills several months. After each chill the urine would be turbid, acid, and full of pus. Although the spleen was not enlarged, the boy had been saturated with quinine. Treatment was thought of no further avail, but the boy having a phimosis, the father wished that remedied. There was no return of the attacks after the circumcision. The speaker believes that malaria may be excluded without a blood examination. It is a rule that a fever that resists quinine is not due to malaria.

Dr. Seibert suggested vulvo vaginal catarrh extending into the bladder or farther and causing suppuration.

Dr. Holt, in closing, said it had been his fortune to see a number of cases of purulent infiltration of the kidneys, all of whom died. Such cases were quite distinct from pus in the pelvis of the kidney. The absence of mucus and of alkalinity assures the case not being cystitis.

Giant Fingers.—Dr. F. Huber, of New York, exhibited a plaster cast and photograph of such a case. The most enlargement and distortion was of the second finger.

Medical Septicæmia in Children was the subject of an address by Dr. W. S. Christopher of Chicago. He spoke in part as follows: We all see many cases of fever which do not fit the description of typhoid, malaria, influenza, or scarlatina. This term is not a scapegoat, but a term under which these endemic fevers may be classed until we can properly differentiate them one from another. Medical septicæmia indicates that it is non-traumatic. The case was then cited of a child, aged twenty months, who had a diarrhœa of three weeks. The temperature was 105° F. but erratic. Scarlatina was ruled out in a few days, typhoid fever also Two days later it seemed surely to be peritonitis. The peritoneal cavity was then irrigated with a sterile normal salt solution. The following day pneumonia developed, but all was recovered from. Here it is fair to infer that the same micro organism caused the inflammation of bowel, peritoneum, and lung, whether appendicitis or no matters not.

In a recent epidemic of twelve such cases three had laryngisums stridulus, followed by fever for two weeks and indigestion. Eight similar cases occurred which must be grouped, and medical septicæmia is a generic name that suits. Some forms of dysentery would belong here, but not the amœbic dysentery.

Dr. Caillé said he should think it difficult to distinguish between a medical and a surgical septicæmia. True, it might be often hard to locate the source of infection, but having located it treat accordingly.

Dr. Fruitnight thought such a nomenclature should be deferred until the cases are differentiated.

Dr. Holt believed that many such fulminant cases would upon autopsy prove to be pneumonia.

Dr. Adams considered the term evasive rather than helpful, and thinks most such cases as described are atypical typhoid.

Dr. Christopher, in closing, declared that an anatomical diagnosis is useless, for we cannot know always without autopsy. He therefore felt that there was need of the class medical septicæmia.

Mirror Writing.—Dr. George N. Acker, of Washington, exhibited a negro boy, aged ten, who is naturally a mirror writer. He writes equally well with either hand, the left beginning on the right side of the paper with the letters slanting to the left. In playing marbles the boy's left hand is the surest. The patient's personal history and heredity were negative. His mind is quick and he is rather cunning.

Before closing Dr. Forchheimer made a few remarks thanking the Society for the honor they conferred in electing him President for the coming year, and with best wishes "auf wiedersehen" adjourned the meeting to next year at Hot Springs, Va.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in Washington, May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 764.)

Second Day, Wednesday, May 30th.

Adeno-carcinoma of the Skin Starting in the Sweat-glands.—Dr. Fordyce, of New York, exhibited microscopic specimens and photographs showing the structure of the malignant growth. He stated that, although a number of pathologists had claimed a sweat-gland origin for certain clinical varieties of skin cancer, only a few cases were on record in which such a point of departure had been proven. In the case in question, the new-growth is a proliferation of the columnar cells lining the sweat-glands, which broke through the membrana propria and infected the surrounding connective tissue. The tumor was removed from the leg of a man, thirty-five years old, and was about two-thirds the size of an egg.

Dr. Fordyce also demonstrated the intra-cellular bodies which are looked upon by many as the cause of cancer. He expressed himself as a believer in the parasitic nature of cancer, but was not prepared to admit that its etiology had yet been made clear.

Dr. Hartzell said that the essential characters of the cells were not changed. He believes the disease to be of parasitic origin, and that the growth of the cells was more rapid when the parasites were in greater number.

Dr. Bronson asked whether the origin in the sweat-glands had any effect upon the induration of the lesion.

Dr. Fordyce replied that he had found such epitheliomas to be quite soft.

Contagiousness of Molluscum Contagiosum.—Dr. Stelwagen, of Philadelphia, read a paper on this question. He quoted a large number of clinical examples of the communicability in households and in institutions. Among others, that of a nurse who had received the disease from a child, who had received it from another nurse. The latter had given the disease to other children. He quoted an example where there were three cases in one family who had infected a young friend who played with them. Also the case where there was an eruption in a man and his wife about the genitals. A case where a brother and sister used the same towel and were both infected. He gave a very exhaustive *résumé* of the reported cases of the contagiousness of the disease. In an epidemic in a hospital for children, two weeks after the first case was observed, there were forty-one cases in the hospital. The long period of inoculation is remarkable. He doubts whether the psorosperm is the cause of the disease.

Dr. Fordyce believed the disease due to an animal parasite, probably the psorosperm.

Dr. Hartzell believed in the etiological relation of psorosperms and this disease.

Dr. White thought that there had been no demonstration that the bodies found in the cells were parasitic and introduced from the outside.

Ichthyosis Congenita (so-called Harlequin Fœtus).—Dr. Sherwell, of Brooklyn, reported a case of universal ichthyosis in an infant. The parents were absolutely healthy and had two other children, both healthy. The child was born at term and weighed two pounds. The whole surface of body was covered with soft, horn-like

scales. The scales on the head were more sebaceous. The flexures were deeply fissured. The mucous surfaces were only slightly affected. There was slight ectropion. Alkaline baths and inunctions of vaseline and ung. aq. rosæ were employed in the treatment. When bathing and inunctions are neglected, extensive scales form on body. The child has been much improved by the treatment.

Protozoa-like Bodies of Herpes Zoster; a Contribution to the Study of Psorothermosis.—Dr. M. B. Hartzell read a paper on this subject, in which he called attention to the bodies resembling protozoa in zoster, varicella, and variola. Pfeiffer was the first to describe them as protozoa, and thought they gained access by the intercostal vessels. There were three varieties. These bodies have a cell body proper, an internal capsule, and a cavity containing several small oval bodies. The second variety is much larger than the first. The body of cell stains feebly. The internal capsule stains deeply. Some of the bodies are found free and show amœboid movements. He found in a case of recurrent zoster the same alterations as in ordinary zoster. He thinks we have a metamorphosis and increased vital activity of the epithelial cells.

Third Day, Thursday, May 31st.

Angioma Serpiginosum.—Dr. J. C. White, of Boston, read a paper entitled "Angioma Serpiginosum and Some Other Dermatoses."

In the case of angioma serpiginosum, from the border of right scapula to nipple there were twenty-four lesions of pin-head size and of a red color. They disappeared partially under long pressure. These lesions increase in size and finally undergo evolution in the centre, the border forming circles or segments of circles. The skin in the centre appears normal except the red color. New foci appear and follow the same course. The disease spreads in an annular manner for an indefinite period, and appears as pale scar-tissue surrounded by scarlet rings.

The writer said that small aggregations of cells are found in the corium in this disease, which are unlike the round granulation cells. Small places in vessels were found filled up with small granular masses, resembling amœboid forms of lower organisms. There seemed a fusion of degenerated cells in the nodules which appeared to undergo degeneration by the strangulation of the blood-vessels. The pathological anatomy of this disease has a great resemblance to that of the pigmented moles.

Acquired Idiosyncrasy for Quinine Showing Peculiar Cutaneous Manifestations.—Dr. Charles W. Allen, of New York, read a paper with this title. He said that the most frequent eruption caused by this drug is an erythematous rash beginning on the face and extending over the whole surface. Other usual forms are the urticarial and papular, while the vesicular, bullous, and purpuric are less frequently seen.

In the case reported by Dr. Allen the subject had previously been able to take quinine in moderately large doses without ill effects. The peculiarities of the case reported are: 1. That the eruption is developed by a very small quantity of the drug; 2. That the lesions are local and show no tendency to spread; 3. That the location of the individual spots is always the same. 4. That the eruption was produced four times accidentally and fourteen times experimentally. The writer says that the simple erythema of one attack may in another attack closely simulate an erythema exudativum multiforme. The patient, in the case reported, took a five-grain dose of the sulphate of quinine at bedtime. During the night a general pruritus developed, and in the morning large erythematous blotches were found on certain parts of the body—on the next morning the prepuce presented large excoriated surfaces suggestive of chancroids. The rest of the glans and prepuce was red and sensitive. The quinine was discontinued, and in about a week the spots desquamated and faded in color. Some months later the patient having taken one "Monsette" pill, not knowing that it contained quinine (about one grain) developed within twelve hours itching, burning, and prickling sensations, and the same spots appeared as before. The whole prepuce was again excoriated. He developed the same symptoms in the same year after taking a cordial glass of coca wine, although in a less pronounced way. The quantity of the drug was exceedingly small.

In this patient, a few hours after taking about one-third of a grain of quinine, the glans penis was surrounded by a ring of redness and the same spots as before developed on the body. Dr. Allen experimented with various salts of quinine, such as the hydrobromate, the hydrochlorate, the bisulphate, dextro quinine, and the bimuriate with urea. The same manifestations invariably followed. These investigations prove that the statement which has been made, that the acid and not the case is the offending substance, is incorrect.

The writer proved by experiments upon this case that the theory of reflex dilatations of the vessels of the skin from stimulation of the sensory nerves of the stomach was not applicable. General symptoms followed holding one-fourth grain of the carbamide in the mouth for fifteen minutes. Quinine given in a suppository and by inunction produced a distinct erythema. A weak solution of quinine in alcohol rubbed into the scalp caused the same symptoms. Dr. Allen noticed in this patient a marked tenderness on pressure over the spinous process of the second dorsal vertebra. Upon this symptom he bases his supposition that the eruption is due to an angio paralysis of central spinal origin. He believes the symmetrical distribution and circumscribed features of the eruption are explained by the theory of nerve origin, as in large doses the reflex function of the cord is lessened and ultimately abolished. The writer thinks it rational to refer these skin changes to an action upon the cord.

Symmetrical Cutaneous Atrophy of the Extremities.—Dr. Bronson, of New York, reported the case, which was a very rare one, only four of the same variety having been found in the literature. Buchwald, of Breslau, was the first to describe this form, and so peculiar were the manifestations of the disease, and so well delineated were they, that the term Buchwald's atrophy was suggested. The affection, which is clearly an idiopathic form, differs from the ordinary atrophia cutis propria in its symmetry and in its tendency to gradual progression and in the fact that the atrophy seems to be of a qualitative kind as well as simply quantitative or degenerative.

The case described by Dr. Bronson affected a patient forty-five years of age, who was a working-man of fairly good family and personal history, and who, except for the atrophic disease, appeared to be in possession of perfect health. The disease had begun about fourteen years ago, and latterly had remained nearly stationary, at least so far as the extent of the disease was concerned. It occupied the entire surface of both lower extremities from the upper part of the feet to Poupart's ligament in front, and extended over the nates behind, leaving the cleft of the nates, however, as well as the genitals, free. The arms were similarly affected from the base of the fingers behind, and from the wrists in front to about the junctions of the lower with the middle third of the upper arms.

The chief marks of the atrophy were the thinning of the skin, discoloration, wrinkling of the surface, and a multitude of shallow depressions scattered over the surface. The skin was everywhere freely movable, and could be lifted in thin folds from the subjacent structures, which folds subsided again to the general level slowly when released, as though the skin had lost elasticity. Everywhere were numberless fine wrinkles which followed the cleavage lines of the skin—they enclosed smooth, shiny interspaces, and gave the appearance of a crumpled piece of gold-beater's-skin. The wrinkling was most marked about the joints, especially the knees,

backs of wrists, and the nates. The discoloration was due in part to brownish pigmentation, that was in most parts punctate, in part to the purple color of the veins, which showed through the thinned and abnormally transparent epidermis with uncommon distinctness, and partly to a red reflex from the arterioles. In a recumbent posture the color of the legs and thighs was more brown, but after standing awhile the veins became turgid with blood, and the surface appeared cyanotic. There was no impairment of sensation in the affected parts, but rather hyperæsthesia. The hairs had nearly disappeared, as also the perspiratory function.

Relation of Impetigo Herpetiformis and Pemphigus Vegetans —Dr. Joseph Zeisler, of Chicago, presented a communication with this title, in which he said that to anyone who has carefully studied the literature and the descriptions of impetigo herpetiformis and of pemphigus vegetans, respectively, it must have become apparent that while each of these rare disorders seems fairly well established as clinical entities, they have many features in common, which occasionally make their differentiation exceedingly difficult even for the expert dermatologist. The speaker referred to the writings of Duhring, Dumesnil and Marx, and of Dubreuilh, who had commented upon a case of impetigo herpetiformis (published by himself in 1887) in a way which shows that while some of them accept his case as a typical instance of that disease, others considered it as an example of pemphigus vegetans. The points of similarity of the two diseases are there more fully detailed. The prevalence in women, the inception on some mucous membrane, the peripheral extension of the cutaneous lesions, the localization on certain places of predilection, the occurrence of vegetations on places where moisture, warmth, and friction exert an influence, the fatal termination, the obscurity of the etiology and pathology are referred to more particularly. The differentiation in a doubtful case will have to be made according to the principle *de potiore denominatio fiat, i e.*, where miliary pustules form the chief lesions during most of the time, impetigo herpetiformis will be declared, while, if bullous lesions predominate, pemphigus will be the diagnosis. The writer thinks the criticisms of various writers concerning the description of such rare cases are unjust, for the reason that variations from the well-established type of any disease are always liable to occur.

Dr. Bronson showed a combined comedo expressor and dermal curette of his invention.

Dr. Gilchrist, of Baltimore, showed some microscopical preparations containing protozoa.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twentieth Annual Meeting, held in Washington, D. C., May 30 and 31, and June 1, 1894.

(Continued from Vol. 45, page 772.)

Second Day, Thursday, May 31st.

A New Neuroglia Stain —Dr. W. J. Morton, of New York, presented some microscopic slides showing the new neuroglia stain of Weigert, presented to him by Dr. Weigert on a recent visit to his laboratory in Frankfort. The neuroglia fibres are stained blue, while the nerve elements are either not stained at all or at least very faintly. The medullary sheaths do not accept the stain, and thus the field is left clear for the differentiation of the neuroglia fibres. Dr. Weigert is not yet quite ready to publish this new stain, although he has been at work upon it for five years; no specimens have hitherto been exhibited on this side of the Atlantic.

Multiple Neuromata.—Dr. Morton also read a paper entitled "A Case of Multiple Neuromata, with Exhibition of Microscopic Sections of a Large Neuroma Removed from the Ulnar Nerve." The tumor developed upon the ulnar about half way between the elbow and the wrist, and was about the size of a hen's egg. Cutting down upon the mass with a view of severing and suturing the nerve if necessary, or of dissecting out so far as possible its strands, he found that the tumor was lying quite free, except for a few thread like adhesions, within a capsule, and that the nerve traversed this capsule from end to end, in five separated bundles. It was therefore possible to enucleate the tumor and replace the nerve strands without the slightest injury to the latter.

The tumor was a myxo-fibroma. The encapsulation of the tumor, and at the same time the confinement of the nerve bundles to the capsule, was novel and of importance to bear in mind in further operations upon such growths.

Crossed Knee-jerk.—Dr. Guy Hinsdale and Dr. J. Madison Taylor, of Philadelphia, presented a communication with this title. It was based on studies of over one thousand cases of nervous disease observed at the Infirmary for Nervous Diseases, Philadelphia, and the institutions for feeble-minded at Carlisle, Pa., and Vineland, N. J. In using the term crossed knee-jerk, it is meant that, the patella tendon being struck, the opposite leg is instantly made to approach its fellow; hence the phrase "in knee jerk," or "contra-lateral knee-jerk," may be used to describe this action. The movement observed in the limb opposite to that in which the patella tendon is struck is not an extension of the leg so much as an adduction of the thigh (vastus internus and crureus). The best attitude for eliciting the movement is not that which permits the freest knee-jerk, such as sitting on the edge of a table. It demands rather more ease of lateral motion of the thigh. This is accomplished very well by seating the subject at ease in a chair with the body erect and the knees ten or twelve inches apart, with the knee joint at rather an obtuse angle, the feet being advanced a few inches.

The phenomenon is observed in a small proportion of normal persons, and in from twenty to thirty per cent. of the cases coming to a clinic for nervous disease. It is observed in a large majority of spastic cases. It is distinctly proved not to be due to a communicated shock or jar to the pelvis, by reason of its absence in all cases of locomotor ataxia, and its production in favorable cases on suspending the subject from the floor and observing the adduction of the thigh on tapping the patella tendon or, as in one case observed, tapping the tendo Achillis.

Crossed knee jerk is also found to be reinforceable. Tracings were shown which recorded, in a normal subject, an adduction in crossed knee jerk of one-sixteenth of an inch, in a spastic one fourth of an inch, and in the latter case, under reinforcement, half an inch. Reinforcement produces the movement in some cases where it is not otherwise evident. A case was related in which a very slight tap on the patella tendon causes violent contractions of both legs, causing the knees to smite together, or cross over; a larger tap will cause, in addition, crossing of both arms in a sort of lock spasm, requiring aid afterward in stretching out the limbs.

The reflex arc involved in movements of this kind is held to embrace the cerebrum.

Dr. H. R. Stedman, of Boston, asked if this condition was not somewhat similar to the so-called allocheiria.

Dr. Walton thought that a practical result, bearing on diagnosis, could not fail to follow careful and systematic investigations of these anomalous reflexes. We have not exhausted the directions in which the reflex impulses may be deflected. He had found not only the classical reflex, described recently by Remak, of toe flexion on stroking the inside of the thigh, but had seen both dorsal and plantar flexion of toes on stroking various areas in the lower extremities in case of broken back.

Dr. Morton spoke of the application of faradism to the right sciatic nerve as having produced a reaction in the muscles of the left shoulder.

Dr. George Jacoby referred to a paper read by him a few years ago in which he had called attention to the phenomenon of irradiation of the electrical current.

Dr. Mills believed that the best explanation would be forthcoming from a careful study of the distribution

of cells and fibres in the cord and their relation to other parts of the system.

The President considered the title of the paper an unfortunate one, and did not look upon this phenomenon as a crossed knee-jerk at all, but as a contralateral muscular contraction. He thought its reflex character was quite doubtful and that there was no difficulty in accounting for irradiation on anatomical grounds.

Dr. Dercum, of Philadelphia, exhibited a skull which had been kindly loaned by Mr. Bailey Willis of the Geological Museum. It belonged to the Peruvian Government, and its origin was traced to pre-historic times. It was shown as an illustration of the ancient method of trephining.

Recurrent Oculo-Motor Paralysis.—Dr. Knapp, of Boston, read a paper with this title. A man of forty-one, with some nervous heredity, had had severe neuralgic pain over the left eye, with ptosis, external strabismus, and numbness of the face, a year before he came under observation. This lasted seven weeks. In December, 1892, one year later, he had intense pain in the left side of the head, with nausea and vomiting. There was complete paralysis of the left third nerve, with anæsthesia of the nose and cheek on the left side, and paræsthesia of the forehead. Photophobia was present. The anæsthetic region was extremely tender on pressure, and there was increased discharge from the left nostril. After two months the paralysis began to diminish, and after four months it had almost wholly disappeared; but the sensory symptoms still continued in a lesser degree. Statistics were given of forty cases, and of ten other cases of a doubtful nature. In only six cases has there been complete recovery from the paralysis in the interval between the attacks, and in four more the pupil remained dilated. In seven cases there was at first complete recovery, but in the later intervals there was some paresis. Senator's division into periodical and periodically exacerbating cases hardly seemed warranted, and, although some of the cases resemble migraine, the affectiou in most cases is not at all like migraine. Three autopsies have shown lesions involving the nerve, and most cases are probably due to such lesions.

Dr. Mills had observed several cases of recurrent ocular palsy with involvement of the fifth nerve. He had also seen cases of recurrent facial paralysis. The only probable explanation in most cases is that of organic lesion. He thought Knapp's cases were probably due to lesion of root fibres.

Dr. Morton Prince agreed with Dr. Knapp in believing that these cases were caused by organic lesion. He believed that pain as a localizing symptom possessed very little value. He would rather depend upon motor and sensory paralysis.

Dr. Walton thought all cases could not be classed together. While many were of nuclear or vasal origin, possibly some of the less grave cases were due to recurring œdema or possibly vascular disturbance at the cortex, which would perhaps explain the coincidence of motor and sensory disturbance. Possibly some cases were allied to the severer form of hysteria.

Dr. Knapp, in closing the discussion, said that there was no case of complete recovery on record where there had been both motor and sensory involvement. In cases of syphilitic origin where only one or two branches were involved, it was more likely to affect the nerve after it had left the pons.

Circumscribed Softening of the Pons, Internal Capsule, Caudatum and Lenticula.— Drs. Charles K. Mills and John Zimmer, of Philadelphia, reported a case which presented two limited lesions of unusual interest—one in the pons, and a second involving the internal capsule, and a small segment of the caudatum and lenticula. The patient, a woman, aged forty-two, had a previous history of alcoholism and of acute articular rheumatism. Examination showed slight impairment of mental action, marked somnolency, and imperfect articulation. At rest, the right eye turned strongly to the right, while the left was not deviated. Both eyes could not be turned together to the left. The lateral movement of the left eye to the right was also impaired, and slight nystagmus of both eyes was present. The lids of the left eye could not be brought fully together. Right facial paresis was present, but the tongue was not deflected. Tendon and muscle phenomena were much exaggerated in the paretic limbs. Anæsthesia could not be discovered in any portion of the body. About eleven days after admission, she had a second apoplectiform attack. She was now totally unable to articulate, but understood what was said. She was also unable to expectorate, and there was interference with swallowing. A thorough and careful autopsy made by Dr. Guiteras revealed a circumscribed softening of the pons. The lesion, at its cephalic extremity reached to within 1.5 mm. of the ventral surface of the pons—laterally extending to the raphe, and about the middle of the pons slightly across the mesial line. The area of softening became smaller and more deeply situated as it approached the post-oblongata, which it almost but not quite reached. The second lesion was revealed by a vertical transection of the right basal ganglia and capsule. The widest portion of the lesion corresponded to the plane of the cephalic extremity of the thalamus. It was about 17 mm. in its antero-posterior extent. The pontile lesion probably involved the root fibres of the abducens, and the fibres connecting it with the facial fibres or nucleus. The position of the lesion was such as not by any possibility to involve the cell-nests of these nerves. The lesion involved the crustal portion of the pons, including a portion of the pyramidal tracts, and the deep transverse fibres. The lesion of the internal capsule was beautifully localized near the genu, probably involving the geniculate and speech tracts.

Lesion of Thalamus; Death from Intestinal Hemorrhage.—Dr. Wharton Sinkler, of Philadelphia, read this paper. He referred to the importance of placing on record all facts relating to the function of the thalamus, and stated that his attention had been drawn, in connection with the case which he reported, to the observations of Lussana, Brown-Séquard, Ebstein, and Schiff, many years ago, in which they produced ecchymoses and hemorrhages into the mucous membrane of the stomach and colon of some of the lower animals, by wounding the corpora quadrigemina and optic thalamus.

The patient was a man aged sixty-seven, who had worked for many years in a stone quarry, and had received frequent slight injuries to the scalp, in consequence of being struck by fragments of stone. In July, 1892, after having been exposed to the sun, he was suddenly taken ill and had to be removed to his home in an unconscious condition, where he was seized with convulsions, which lasted for the greater part of two days. After a month he was able to resume his work; but two weeks later he began to have epileptiform convulsions, which recurred at irregular intervals of from one to two a week. The seizures were always preceded by an olfactory aura, the patient observing the smell of burning sulphur. After a few months the patient had maniacal attacks after his fits, and was removed to the Philadelphia Hospital in December, 1893.

There was nothing notable about his condition, except that the attacks of epilepsy were of the precursive form. He would run violently, and imagined that he was pursued by devils. Toward the end of February he had an attack in which there was rise of temperature without any physical reason being discoverable. His intellectual powers failed; and he gradually fell into a somnolent condition, which lasted for nearly three weeks, at the end of which time he was suddenly, without premonitory signs, seized with intestinal hemorrhage of a profuse character, from which he died in about twelve hours.

At the autopsy the mucous membrane of the colon was found to be softened and deeply injected, but no lesion was found in the way of an ulceration, or rupture of a vessel which would account for the hemorrhage. The brain showed very marked evidence of an old lepto-men-

ingitis over the left hemisphere, and there was atheroma of the vessels of the base. In the posterior right thalamus there was found a small area of softening. It was about one-third of an inch in length, by one-fourth of an inch in its transverse diameter. No other coarse lesion could be found in the brain.

Cerebral Hemorrhage: Its Causes and Premonitory Symptoms.—Dr. C. L. Dana, of New York, presented this paper, based upon the study of 100 consecutive cases of apoplexy with hemiplegia, observed at his clinic at the Post-Graduate Hospital, and 79 cases of apoplexy, with autopsy, observed in Bellevue Hospital; 30 of the latter came under his personal care and observation. Of 100 non-fatal cases 36 were due to syphilis. The special characteristics of the attacks due to syphilis are that they occur in early life; they are often multiple in character, and the pathological condition underlying them is usually a thrombosis and softening. So far as his experience and records went cerebral hemorrhages are rarely repeated, and it seemed as if in many cases the rupture of an artery changed the vital conditions, as it certainly does the personal habits, so that the attack exercises a conservative influence upon the individual and actually tended to prolong life.

Dr. E. D. Fisher, of New York, presented a report of 77 cases. Fifty one had one attack; 16, two attacks; 9 had three, and 1 had six attacks. All are still living. These cases were observed in his service at the city almshouse. The average age at which the first attack occurred was $44\frac{6}{17}$ years. His observations, he thought, confirmed what had been said by the reader of the paper. The longest duration since the attack was twenty-two years.

Dr. Gray, of New York, thought that the fatal defect in the paper was that many things were confounded. It told us nothing as to the frequency of apoplexy, but left us in doubt as to the elements of diagnosis.

Dr. L. Weber, of New York, said that while he believed Dr. Dana's deductions from his own cases were of value, those from other sources did not seem to him to be applicable.

Dr. William A. Hammond doubted whether life was in any way protected by an attack of apoplexy, as the same causes would persist.

Dr. Wharton Sinkler had observed a case in which the attack occurred twenty-five years ago. The man did not seem to be in any way benefited in his general condition.

Dr. Prince thought the fallacy lay in the statistics as to those still living, as one cannot say how many attacks they are going to have.

Dr. Dana, in closing, said it was hardly fair to criticise his data, as sufficient time was not permitted for the reading of his entire paper.

Lumbar Puncture for the Removal of Cerebro-Spinal Fluid.—Dr. William Browning, of Brooklyn, N. Y., read a paper with this title. He reviewed the main points in this recently devised operation. Brief notes of a few cases were given as well as directions for its performance. The following conclusions were reached:

1. The method is simple, easily practised and rather attractive.
2. In itself it is usually without danger.
3. By it we certainly can draw off cerebro-spinal fluid.
4. The quantity removed at short sittings has been from one to one and a half ounce in adults.
5. This without doubt represents the amount of free fluid usually present in the lower vertebral canal even when occluded above.
6. In internal hydrocephalus the relief, if any, is but very temporary. In the common form due to tubercular meningitis the result is not worth the trouble; while in the closed or sacculated forms it must rather do harm than good.
7. As a diagnostic means, *e.g.*, in suspected meningeal hemorrhage, it is valuable. As an index of pressure it may also be worth noting.
8. It is worth further trial:—(*a*) As a passing relief in brain tumors not complicated by hydrocephalus; (*b*) As a substitute for trephining in progressive dementia; (*c*) In certain spinal troubles; (*d*) And possibly as a means of applying medication directly to the spinal meninges.
9. In conclusion it may be said that, while admissible in all cases of brain-pressure, there is as yet no established indication for this procedure except for diagnostic purposes.

Dr. Mills said that all operations of this kind are unphilosophic, and would accomplish nothing, as the fluid reaccumulates The same may be said of hydrocephalus. Some good may be done when the fluid is either blood or pus; otherwise it is not indicated.

Dr. Dana had utilized this method in three cases of alcoholic meningitis (in the so called wet-brain). Two recovered and one died. In the adult the operation is difficult. He agreed with Dr. Mills as to its indications and utility. He believed that the operation possessed, at least, some rational foundation.

Non-Operative Treatment of Brain Tumors.—Dr. Theodore Diller, of Pittsburg, was the author of this paper. The writer took the view that not all brain tumors which could be localized should be operated on. He cautioned against regarding as successes those which merely succeeded surgically. The obstacles in the way of a complete success were many, and the results were disappointing, in spite of the rich and growing knowledge of localization. Operations should not be undertaken unless the patient was getting worse in spite of medical treatment.

Dr. Starr spoke of the case of a man with a doubtful history of syphilis and all the symptoms of cerebral tumor. Its localization was a simple matter. Mercury was used and iodide of potash was given in doses of three hundred grains daily. There was marked improvement in all symptoms; and it seemed to be a case cured without operation. The patient died suddenly, and at the autopsy a cysto-sarcoma was found without any evidence of gummatous infiltration.

Dr. Putnam believed we should only operate when there were definite indications.

Dr. Sinkler mentioned the case of a man with Jacksonian epilepsy and no history of syphilis. Two years later all symptoms of tumor were present. Mercury and iodide were used, but he became progressively worse. An operation was performed but no tumor could be discovered. The wound healed well. Since then, the patient has improved steadily in all symptoms.

Dr Jacoby said that there was a class of cases presenting all of the symptoms of tumor which get well without operation. He cited the case of a man with many of the symptoms excepting optic neuritis, where he was unwilling to make a positive diagnosis. The plasmodium malariæ was found in his blood and he made a complete recovery under large doses of quinine.

The President stated that we have all been disappointed more or less in the results after operation. It may be our own fault on account of the delay in operating. He had a similar experience to that of Dr. Starr. At the autopsy there was found a typical glioma. The symptoms had entirely disappeared for several months. In another case with all the symptoms of tumor iodide had been used, but all symptoms subsided after thorough mercurial inunction.

An Electrode for Use in Diagnosis.—Dr. W. M. Leszynsky, of New York, presented an electrode which had been specially constructed with a view to its usefulness in diagnosis.

Stolen Grafts.—A man has brought suit in San Francisco for $25,000 damages, for the loss of some strips of skin removed from his thigh and grafted upon the head of another patient in the hospital. He claims that the grafts were taken without his consent and knowledge, while he was under the influence of an anæsthetic, given, as he was led to believe, to save him from the pain of an examination that was to be made by the surgeons.

ASSOCIATION OF AMERICAN PHYSICIANS.

Ninth Annual Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 802.)

FOURTH DAY, FRIDAY, JUNE 1, 1894.

The Chemical Products of the Anaërobic Putrefaction of Pancreatic and Hepatic Tissues, and Their Effects upon the Tests for Morphine.—DR. VICTOR C. VAUGHAN, of Ann Arbor, Mich., read a paper with this title. The chemical products of putrefaction are modified by the conditions under which the process proceeds. There are always present, during life, in the upper part of the small intestines, certain anaërobic germs which produce indol and its derivatives. When the host dies, these germs do not necessarily cease to exist. They can grow, multiply, and produce their special products only in the absence of air. Pancreatic and hepatic tissues allowed to decompose in the absence of air, contain chemical substances which can be extracted by the methods of Draggendorf, and which give many tests similar to those given by morphine.

The author had demonstrated these facts by experiment. This being true, new methods must be sought for the detection of morphine in the human body after death.

No discussion.

Gastro-enteric Rheumatism.—DR. HENRY M. LYMAN, of Chicago, presented this communication. Gastro-enteric rheumatism is characterized by symptoms as definite as those of articular rheumatism.

It occurs among neurotic, arthritic, senile, or prematurely-aged people.

It belongs to the erratic and neuralgic variety of rheumatism.

Its pathology is as indefinite as that of chronic neuro-muscular rheumatism in general.

It is probably due to acidity of the stomach, or at least to the absorption of the products of an abnormal digestive process. The symptoms come on when the stomach is nearly empty, *e.g.*, at midnight. The pains are exceedingly variable, but are distinct from gastralgia. It is a dull, deep-seated pain, not influenced by motion. It shifts from place to place. It may be in the cardiac region, it may involve the pelvic nerves and cause rectal or bladder symptoms, or the sexual nerves and cause priapism. Unlike dyspepsia, it does not affect the general health, though the patient may become anæmic.

The treatment consists in providing warmth and dryness of the surroundings of the patient; hepatic and renal elimination; nutritious and easily digested food; warm baths, and abundant exercise.

DR. J. H. MUSSER, of Philadelphia, deprecated the introduction of new terms. He would prefer "the gastro-enteric form of lithiasis."

DR. J. E. GRAHAM, of Toronto, Canada, expressed his interest in the paper.

DR. VICTOR C. VAUGHAN, of Michigan, said: We use the term rheumatism to cover a great variety of things. We should make a distinction of those pains caused by uric acid. It might be well to call these pains described above, gout. He called attention to the fact that the tendency of investigators was to doubt the former teaching that uric acid was an incompleted stage in the production of urea.

DR. I. T. DANA, of Portland, Me., thought that rheumatism is a conglomerate pathological mass. He would confine the term rheumatism to acute articular rheumatism and give other names to other conditions.

DR. VAUGHAN agreed with the previous speaker, and added that he believed these diseases would ultimately be distinguished by examinations of the blood.

DR. LYMAN closed the discussion. He was not satisfied with the name, but it was the best he could do in the present state of our knowledge

Osteomalacia.—DR. GEORGE DOCK, of Ann Arbor, Mich., reported the case of a woman, aged twenty-five years, a native and resident of Michigan, who had a marked case of osteomalacia. The case was probably, though not distinctly, of puerperal origin. The case lasted three or four years, with marked symptoms for two and a half years, and was characterized by the common subjective symptoms and softening, spontaneous fracture, and deformity of the bones, and excretion by the kidneys of large quantities of lime salts (renal colic). Treatment had no influence on the disease (lime, phosphates, etc.).

Post-mortem.—The changes were very marked and do not throw any light on the pathology of the disease (microscopic and histological specimens were shown).

He referred briefly to all the cases hitherto reported in the United States, which, excluding three of doubtful diagnosis, are very few, and do not add materially to our knowledge of the disease.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, January 24, 1894.

GEORGE C. FREEBORN, M.D., PRESIDENT, IN THE CHAIR.

Carcinoma of the Head of the Pancreas.—DR. J. S. ELY presented such a specimen. A man sixty-three years of age, a shoemaker by occupation, was seen by him in March, 1892, with Dr. Ferrer, at the Out patient Department of the Roosevelt Hospital. He had been well up to six weeks before. At this time he began to have pain in the right hypochondrium, and detected a lump in this region. On March 3d, he rather suddenly became jaundiced, and four days later there was a severe attack of vomiting, the vomitus being whitish and free from blood. The pain in the region of the tumor continually increased, the tumor appeared to be growing larger, and he had lost much flesh and was greatly troubled with insomnia and constipation. When first seen, he was much emaciated and deeply jaundiced; the tongue was dry and clean, and the arteries hard and tortuous. A physical examination of the chest gave the signs of pronounced emphysema. On the right side was a large, irregular, nodular mass which appeared to be the lower border of an enlarged liver. The mass was quite tender and slightly movable on deep inspiration and gentle manipulation. No tumor could be detected under the enlarged liver, or in the situation of the pylorus. The stomach was normal in size. The temperature was 99.8° F.

The case was apparently one of carcinoma in the substance of the liver. Because of the absence of marked gastric symptoms and gastrectasia, and because of the intensity of the jaundice, he had been inclined to the opinion that the primary carcinoma was in the head of the pancreas, or in the common bile-duct near its entrance into the duodenum, the former being considered the more probable on account of the late appearance of the jaundice. After admission to the hospital the pain was relieved somewhat by moderate doses of morphia. There was quite free epistaxis on several successive days, and this greatly prostrated him, so that on March 23d, after a short period of unconsciousness, he died of exhaustion. During the two weeks he was in the hospital, the temperature was not higher than 101° F., and it only once reached that point four days before his death.

The autopsy was made by the speaker about twenty-four hours after death. The body was much emaciated and extremely jaundiced. Scattered through the mesentery were many small, hard masses, the largest being about half an inch in diameter. Many of these were situated at the point of attachment of the mesentery and intestine. Around the common bile duct was a hard mass, $1\frac{1}{2} \times 1 \times \frac{3}{4}$ inches, which replaced the substance of the pancreas. This mass was continuous with a thickened mass around the common bile-duct near its mouth. Above this point this duct was greatly dilated. Scattered through the liver were spherical masses—both discrete and conglomerate—which were very abundant near the

lower border of the liver. They presented the characteristic appearance of carcinomatous nodules in the liver. Between the nodules the liver substance showed dark centres and light peripheries of the nodules. The gall-bladder was adherent by old adhesions to the under surface of the liver, to the duodenum, and to the tumor around the mouth of the common bile-duct. The stomach appeared normal. The spleen showed chronic congestion and interstitial splenitis. The kidneys were of about the normal size; their capsules were moderately adherent; there were some small cysts, and the markings of the cortex were indistinct. There were numerous small ulcers, with indurated bases, situated on the mesenteric attachment of the small intestine, and continuous with the small tumors in the mesentery. The hemorrhage was thought to have occurred from some of these ulcers. The intestine contained much liquid, granular, dark greenish-brown fecal matter. The heart was of normal size. There was atheroma of the aorta. The lungs were excessively pigmented, and their surface showed considerable old pleurisy. Specimens were exhibited under the microscope showing intense athracotic pigmentation, lying in the interlobular connective tissue. This same pigmentation was also quite abundant in the liver—a point worthy of note. Scattered through the lungs were a dozen or more hard nodules, the largest being three fourths of an inch in diameter. Microscopical examination showed all the growths in the various organs, as well as the masses in the mesentery and intestinal wall to be deno-carcinoma, or that type of carcinoma in which the arrangement of the epithelial cells was such as to suggest the acini of a gland. This was not the appearance, however, everywhere, the tumor in many places presenting the typical picture of small alveolar carcinoma. The structure of the metastases was much more uniformly that of adeno-carcinoma than that of the supposed original tumor in the head of the pancreas. With regard to the intestinal lesions, there could be no doubt that the ulceration was a secondary result of the involvement of the intestinal wall by metastases which formed in the mesentery at the point of its attachment to the gut. The sections showed several stages of the encroachment of these metastases on the intestinal wall, and of the resulting ulceration. Intense congestion was visible in the floors of some of the ulcers, and it was undoubtedly from these that a part of the hemorrhage occurred, evidence of which was seen in the dark granular material filling the intestine.

The speaker said that the occurrence of such metastases, with secondary involvement of the intestine and ulceration, he believed to be rather unusual. The material giving origin to these metastases must have been carried by the blood-current.

A tumor of the structure and location here described might have its origin in the duodenum, in the common bile-duct, or in the head of the pancreas, and it was usually impossible to say with certainty from which of these structures it originated in the present case. But, as the head of the pancreas occupied the centre of the carcinomatous mass which, it was evident, was the primary nodule of the tumor, it was believed to have begun its growth in the pancreas. A measure of support was given to this view by the following case:

A man sixty-one years of age, a varnisher by occupation, was treated in the Roosevelt Hospital, during the fall of 1891, for chronic diffuse nephritis, and was discharged improved. On March 24, 1892, he returned, stating that soon after he left the hospital he began to feel weak, and to be troubled with cough in the morning, and occasionally by bloody expectoration, dyspnœa, and palpitation. On March 14th, he first noticed jaundice, and this had steadily increased. On admission he was deeply jaundiced and decidedly emaciated; there was œdema of the legs and thighs. The tongue was coated and dry, the arteries were very atheromatous, the pulse was 96, regular and feeble, and he had ascites. The temperature was 99°. Physical examination showed an accumulation of fluid in both pleural cavities, more on the left side. The hepatic dulness extended from the fifth rib to the free border of the ribs. He soon developed orthopnœa, and died on March 26th, four days after admission. The post mortem examination was made the same day by Dr. Ewell, the house physician. The abdominal cavity contained much bile-stained liquid, and the organs were also bile stained. The left pleural cavity contained fluid; the heart was somewhat enlarged, and the left ventricle dilated and hypertrophied. The mitral valve was thickened and calcareous. The lower lobe of the left lung was compressed and carneous, and contained a nodule of old healed phthisis, one-half inch in diameter. There was a similar nodule in the right apex. The peritoneum around the liver was covered with a layer of loose fibrin, and the gall-bladder was distended and filled with liquid bile. The cystic duct was apparently obliterated. The liver weighed three pounds and eight ounces, and was very hard, and the interlobular fibrous tissue was increased. The kidneys were small, the capsules adherent, the cortex thin, and the markings obliterated. The spleen was small and hard, and showed recent inflammation of its capsule, similar to that seen in the liver, besides old perisplenitis. The stomach, duodenum, and small intestine were normal. The head of the pancreas was hard near its tip. Behind this was an abscess-cavity, one and a half inch in diameter, and a second separate abscess was found in the tail of the pancreas. Microscopical examination of the hard mass showed it to be an adeno-carcinoma. The mesenteric lymph nodes near the pancreas showed no involvement, and there was no trace of metastasis anywhere. The death of this patient from Bright's disease and peritonitis, revealed a carcinoma in the head of the pancreas in a very early stage, while still limited to the original site.

The speaker said that he had reported these two cases that they might be compared with the one presented at the last meeting. Where jaundice developed in an old person in the manner described, and where gall-stones and inspissated bile could be fairly excluded, carcinoma at this point should be thought of as an extremely likely cause of the jaundice. In two of the cases the diagnosis was made of carcinoma in this region—a more exact localization would of course be quite difficult. In the first case, he thought, from the late development of the jaundice after nodules had formed in the liver, that there was probably a carcinoma in the head of the pancreas instead of at the mouth of the common bile-duct, in which case the jaundice would have probably occurred earlier.

Dr. J. M. Byron said that he was exceedingly surprised at the similarity of the structure exhibited in the various organs in which metastasis had occurred. It was well understood, of course, that in a glandular organ like the pancreas the growth might take place on the epithelium of the organ, and proliferate and produce a new growth which would resemble the organ from which it sprung; but when the metastasis occurred, for instance, from the pancreas to the bone, or to another organ not a glandular organ, he could not understand how a glanduloid formation such as was seen in the specimen could take place. This was the first time he had heard of it.

Regarding the second case, he asked whether the lungs had been examined, and also the exudation of blood, in order to determine whether or not there was a primary epithelioma of the pleural cavity.

Dr. Ely replied that he did not make the autopsy and had not been able to see the physician who had made it, but if there had been anything noticeable about the pleura he felt sure that it would have been noted. There was a great deal of œdema and advanced ascites, and it was thought at the time to be not an exudation, but a simple transudate.

Dr. Byron said he had asked this question because he was familiar with cases of endothelioma which had been presented by Dr. H. M. Biggs, and in which the first symptoms were those of small exudations of bloody se-

rum into the pleural cavity. These had been diagnosticated at first as ordinary pleurisy, but at the autopsy the pleura had been found to be greatly thickened, and there were immense numbers of metastases.

General Tuberculosis.—Dr. T. S. Southworth presented specimens from a case of general tuberculosis. They were removed from a child of fourteen months, in the Nursery and Child's Hospital. It was one of twins, and when born, in November, 1892, weighed 4½ pounds. It was breast fed, and did well up to the spring of 1893, when it had whooping cough. At the age of six months it weighed 16 pounds. Last August it began to have a slight cough, and since then it steadily failed, until at the time of its death, on January 18, 1894, it weighed only 8¼ pounds. The chest was examined once or twice by the house physician, but no very definite physical signs were found. At the autopsy the emaciation was very noticeable. The abdomen was distended. On opening the thorax the right pleura was found firmly adherent over the upper and middle lobes of the right lung, and there was a yellow, cheesy mass found beneath the pleura, embedded in the upper and middle lobes on the anterior surface. It was adherent to the pleura, but not to the lung tissue. When removed, it left a rough cavity which did not apparently communicate with the bronchi. The edges of this cavity were sharp and slightly overhanging. The upper and middle lobes of the lung were consolidated, and showed tubercles on the surface. The adjacent bronchial glands were large and cheesy. The left lung also showed scattered patches of tubercular infiltration. The pericardium was adherent over the left border of the right ventricle. The heart and valves were normal. The liver showed a few tubercles on the surface. There was general adhesive peritonitis binding together all the abdominal organs, but there was no fluid in the abdominal cavity. The spleen was covered with lymph, its capsule was opaque, and there were a few miliary tubercles on its surface. The kidneys were apparently normal. Both the large and small intestine were covered with lymph and studded here and there with tubercles beneath the peritoneum, and also in the mesentery. In the large intestine were some superficial ulcerations, and other areas which appeared to be suppurating lymph nodes which had not broken down. The mesenteric glands were much enlarged and cheesy. The nodule found embedded in the upper part of the right lung was about the size of a walnut. Smears were made from the deeper portions of the mass, and tubercle bacilli found. Small pieces were also examined microscopically, and showed cheesy degeneration and the remains of giant cells. There was no definite glandular structure remaining.

A Case of Pyuria.—Dr. F. Tilden Brown presented a report of a case for diagnosis. He said that he had had a patient suffering from pyuria under his care for five months. The patient had been bedridden for the greater part of this time. There was no abnormal temperature. The cystoscope showed pus coming from the left ureter. He had not been able to exclude tuberculosis of the genito-urinary tract, although repeated search had been made for tubercle bacilli. At times there was also a slight hæmaturia and some discomfort in the left side and left testis, suggestive of a renal calculus. The pain had been accounted for by the discharge in the urine of certain shreds. The hæmaturia had been rather more marked after exertion. The urinary examinations had been very contradictory. The speaker raised the question whether we could expect a tubercular process of the kidney where there was a profuse suppuration, and yet no associated micro-organisms and no elevation of temperature. He thought it would be rather unusual. If due to a stone in the kidney, one would expect more intense subjective symptoms. The leucocytes appeared to be well formed. He had examined for filaria, bilharzia, and similar organisms, with negative result.

Dr. T. M. Prudden remarked that in making examinations where tuberculosis was suspected, it was desirable to use the sediment from large quantities of urine. Lately he had been accustomed to ask for the urine of two or three days, and after decanting the sediment, it was placed in the centrifugal machine, and still further concentrated. By this method tubercle bacilli could be found in some cases where the more usual methods of examination gave only a negative result.

The Society then adjourned.

Correspondence.

OUR LONDON LETTER.

From our Special Correspondent.

HOSPITAL SUNDAY—MANSION HOUSE RECEPTION—ROYAL SPEECHES FOR HOSPITALS—THE MIDWIVES' REGISTRATION QUESTION—THE ROYAL SOCIETY'S CONVERSAZIONE—THE ANNUAL MEETING—A DOCTOR'S LEGACY—OBSTETRICAL SOCIETY—DIVISION OF BROAD LIGAMENTS—EFFECT OF THIS AND OÖPHORECTOMY ON MENSTRUATION—OPPOSING OPINIONS—ADENOMA OF CERVIX WITH A DEPRESSION.

London, June 16, 1894

The Hospital Sunday Fund promises to equal past years, but at present only a small proportion has reached the Mansion House. Up to Thursday evening £14,000 had been received. The Lord Mayor and Lady Mayoress gave a reception on the 7th, in connection with the movement. Our princes have lately pleaded the cause of our hospitals. On Monday the Prince of Wales spoke for the Popular Hospital, and afterward inaugurated a new Home for Missions to Seamen. On Saturday the Duke of Connaught spoke at St. Thomas's Hospital, and it is very lately that the Duke of York presided at St. Mary's. This is good work for royalty.

The Midwives' Registration question continues to agitate professional circles, and Dr. Carter, of Liverpool, has entered the lists against Dr. Renton, who has so long waged war on behalf of the profession. Dr. Carter's previous appearances in medical politics are hardly calculated to inspire confidence in his proceedings or in those of the British Medical Association. It matters little, however, what may be done at present, for no one expects that the Legislature will find time to deal with the question this session, and the Government is not likely to add to its instability by attempting to pass a measure on a subject so much controverted.

On Wednesday last the *conversazione* of the Royal Society was held with the usual *éclat*. This function—sometimes called "the ladies' night"—is the one that appeals to the uninitiated, and therefore the one occasion on which the chief scientific society, so to say, unbends. There were a considerable number of photographs and other interesting things exhibited in illustration of various scientific matters. A curious if sombre exhibit was a mummy cloth calculated to have been made in the Fourth Dynasty, and the strands were said to be 300 by 150 per inch—a contrast with the 140 by 140 of present day fine Irish linen.

On Thursday the annual meeting was held, and the new Fellows elected. Among them are some whose work is of much interest to medical scientists, and two are members of our profession—viz., Mr. Watson Cheyne and Dr. J. Rose Bradford. The F.R.S. is so highly prized that I may venture to congratulate these gentlemen on the recognition of their work. It is always agreeable to see colleagues obtaining merited distinctions.

Another law case has been settled honorably to the profession. A will made by a sick patient left Dr. Ormsby £3,000, and this will was disputed on the ground of incapacity and undue influence. The case utterly broke down—"crumbled away," to use the expression of the judge—and the counsel for the complainants threw up his brief and publicly withdrew all

imputations But what is to compensate Dr. Ormsby for the expense to which he has been put and the moral torture he must have endured in the interim? It seems a terrible thing that a patient in dividing a property of £86,000 confers a doubtful benefit on his "dear friend and confidential adviser" by bequeathing him a moderate legacy.

At the last meeting of the Obstetrical Society a paper was read by Dr. Remfry, on "Ligature and Division of the Upper Parts of both Broad Ligaments, and the Result of this Operation as Compared with that of Removal of the Appendages." This plan was adopted in a case of bleeding fibroid, which did not admit of oöphorectomy. The paper compared the two procedures from an anatomical point of view as well as in reference to the result. In respect to the theories as to the amenorrhœa after removal of the appendages, the author, having discussed several, concluded that changes in the circulation with diminished blood-supply to the uterus were the chief factors; and this conclusion was supported by the case related, in which menstruation did not return for three months, and the slightness of the operation was opposed to the shock theory.

A decided difference of opinion was expressed in the course of the discussion respecting the amenorrhœa after oöphorectomy. Dr. Horrocks declared that in all his experience he had never seen menstruation continue for any length of time after complete removal of both ovaries. It is difficult to be sure that the ovaries are removed entire. He still held that the ovaries were essential to menstruation, although not to ovulation. He had never been able to find the nerve which was said by some to influence menstruation, and would like to see proof of its existence, but of course he did not doubt the influence of the nervous system. In contrast with this opinion Dr. Duncan said he had had four cases in which, many months after complete removal of the appendages, the patients had menorrhagia. He could not account for this unless the ligatures of the stumps were perhaps exciting irritation. He held that, so long as no ovarian tissue remained on the proximal side of the ligature, a small amount on the distal side was of no importance. In several cases he had left portions of firm ovarian tissue to prevent slipping of the ligatures, because the ovaries and tubes were so firmly matted down in the pelvis that he thought it safer to do so, but in no instance had menstruation occurred. Dr. Amand Routh referred to the possibility of hemorrhage from other causes, and said he had dilated in three cases of persistent hemorrhage after removal of appendages, and in two he had found a polypus and in the other villous growths. He believed the ovaries acted through ganglionic nerves going from them to the uterus, and, of course, these nerves were removed in oöphorectomy, so that we cannot absolutely ignore them as a cause of menstruation.

Dr. Routh's observation as to polypi is suggestive of the possibility of such cause being overlooked before oöphorectomy, and will no doubt put operators on their guard against such a mischance. Dr. Remfry's case, although interesting, is not unique, since, as mentioned by the President (Dr. Herman), a case has been recorded by Dr. Murphy and another by Dr. Kilner Clarke, and in them menstruation was not arrested. It has also been proposed to tie the broad ligaments in order to arrest malignant disease, but I do not remember to have seen it recorded that the plan has been adopted. Dr. Remfry, in his reply, did not admit that removal of the appendages insured the arrest of menstruation, some published cases being opposed to this, though it is not easy to refute the objection that in these cases the removal was not complete.

Dr. Braithwaite next read an account of a case of adenoma of the portio vaginalis uteri forming a depressed sore or ulcer. Drawings of the case were exhibited, and it was clearly an unusual one. Among the remarks made upon it I may mention that, except for the depression of the surface of the ulcer, every one would have taken it for an ordinary erosion and the suggestion that this depression might possibly be accidental, as erosion might have occurred on a previously depressed area. In support of this is the fact that the patient had had three children. Another suggestion was that the adenoma had become malignant where the ulceration had been seen, although the microscope did not show this. Still it is very common for these cervical adenomas to become malignant, and this change may begin in a very limited area.

STATISTICAL FACTS AND INACCURACY.

To the Editor of the Medical Record.

Sir: Referring to Dr. Spence's letter in the Record of July 7th, I must confess that I cannot attempt to unravel the garbling of my statements which it contains. I may, however, now quote from Dr. Spence's letter: "Statistics, in order to be valuable, should be, as to their material facts, correct."

Dr. Spence's doubts, to be euphemistic, hinge upon my Case IX. To show his correctness and minuteness, I may state that, on June 20th, the mother brought the child to my clinic at the Post-graduate School, and the case was shown to the students as practically cured.

Furthermore, I translate the following letters from Dr. Voegtle and the child's father (originals inclosed), lest Dr. Spence continues in his error, which I doubt not is unintentional.

The father writes: ". . . I never had the remotest thought of telling Dr. Spence that my child did not recover until Christmas. But I did tell him that the wound was entirely healed toward the end of July. . . ."

Dr. Voegtle, of Long Island City, writes, under date of July 10, 1894, ". . . Your dates regarding the case of empyema in Ravenswood are essentially correct, varying only in the matter of a day or two. . . . The child was discharged from treatment on July 16 (1893); the wound was healed in the beginning of July. . . ."

With the expression of most distinguished consideration to Dr. Spence, I am,

Yours very truly,

Carl Beck, M.D.

July 17, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 14, 1894.

	Cases.	Deaths.
Tuberculosis	95	100
Typhoid fever	17	6
Scarlet fever	57	9
Cerebro-spinal meningitis	2	3
Measles	59	4
Diphtheria	190	49
Small-pox	4	4
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

The Lancet's Investigation of the Electrical Treatment of Sewage.—The proposal to treat sewage electrically was received a few years ago with considerable enthusiasm, and many experts ventured to think that electricity, which was doing so many wonders in other respects, would probably also give assistance in the direction of sanitary affairs, and perhaps afford a satisfactory solution of the problem of sewage disposal, if not indeed of sewage utilization. But the

first attempts to utilize the electric current as a sewage purifier met with little success, owing to the great practical difficulties that were encountered. We need not enumerate them here. Suffice it to say that, of the electrical processes which count for anything now, there are two which continue to excite considerable interest and curiosity among engineers and sanitary experts at the present time. We refer to the Webster electrolysis process and the Hermite system of treating sewage with electrolyzed sea-water. In the former method the sewage is actually exposed to the action of the current, while in the Hermite method the sewage is submitted to the action of sea-water, the composition of which has been partially altered by the action of electricity. Briefly, the Webster process consists in allowing ordinary sewage to flow through channels in which are placed iron plates or electrodes, set longitudinally, with the usual battery connections, with the positive and negative terminals of a dynamo. The sewage in its passage through these channels is said to become entirely split up by the action of the electric current upon the chlorides always present in sewage. At the positive pole the chlorine and oxygen given off combine with the iron to form a salt, which is probably hypochlorite, and at the same time carbonate of iron is assumed to exist in solution, which not only deodorizes the fecal matter by removing sulphuretted hydrogen (FeS), but also acts as a carrier of oxygen from the air by being alternately reduced to ferrous and oxidized back to ferric oxide. The Webster process, therefore, although an electrical one, depends upon the production of certain chemical salts; but it is probable that the efficiency of the method depends largely, if not entirely, upon the fact that the sewage is presented to these chemical bodies while they are in a very active state—in fact, *in statu nascendi*. The Hermite method consists in the electrolysis of sea water and the subsequent flushing of the contents of water-closets with a definite quantity of the resultant fluid. The Hermite fluid is, therefore, a chemically active fluid, prepared by electrical means. The sewage is never in contact with the current, as in the Webster process, nor does the process pretend to secure the precipitation of organic matters. It claims, rather, to effect the complete deodorization and sterilization of sewer contents. Both processes, therefore, have one common object in view—namely, the healthy disposal and not the utilization of sewage.

The Hermite process for the treatment of sewage, with which the present report proposes to deal, has been conducted on an experimental scale at Worthing during the early months of the year, with the view of its adoption in accordance with the plan originated by M. Hermite.

The Lancet's communication has shown that electrolyzed sea-water contains probably as its chief active constituent hypochlorous acid, resulting from the partial dissociation of magnesium hypochlorite, and that it is fairly stable under ordinary circumstances; that it is a powerful bleaching liquid, being superior in this respect to bleaching powder solution, but not to a solution of bleaching powder of equal chlorine value, in which the hypochlorous acid has been liberated by the addition of a weak acid (CO_2 or others, in weak solution); that it is also a powerful deodorizer, and that in all probability these properties are due to the united action of oxygen *in statu nascendi* and chlorine. These, in brief, are the chemical properties of electrolyzed sea-water, and it remains for us to consider what effect for good or for evil such a liquid of definite strength would have when mixed in a certain proportion with fecal matter. It deodorizes, but does not destroy or remove organic matters, although there is little doubt that certain of them are partially changed, and most probably those which are more readily putrescible (*vide* the analysis of effluent). While these things are true and are so far satisfactory, there must also be certain drawbacks in the system which are likewise indicated in these experiments. Electrolyzed sea-water, for instance, is rapidly reduced in strength by common newspaper, and as this is an almost invariable accompaniment of human dejecta its presence in the sewer must seriously affect the activity of the liquid, even if it does not withdraw the active constituent entirely. Indeed the entire contents of a sewer rapidly appropriate the chlorine strength of the liquid. (Compare also in this regard the bacteriological experiments with stools, urine, culture, etc.) The same observation applies to soap or domestic waste, etc., which rapidly "kills" oxygenated chlorine compounds. Again, it can only be supposed that deodorization, not to say sterilization, is complete when the chlorinated body is in excess, and an effluent containing free chlorine or its equivalent is inadmissible to rivers. The expense, moreover, in inland towns would be greater since it would be necessary either to carry sea-water or to prepare it artificially. M. Hermite's proposal is to establish a producing centre in the towns and to supply the liquid through pipes into all the streets and houses, much in the same way that water and gas are at present supplied. The adoption of such a scheme in any place would no doubt lead to a sanitary condition of things hitherto unreached, but many excellent advances could be made in the same direction, it should be remarked, if cost were not an item which so often bars the way. Apart, however, from such a scheme, there is no doubt that the production from sea-water of a powerful bleaching agent and deodorant is an innovation which should afford very material aid to sanitary progress. Thus for many purposes the substitution of electrolyzed sea-water for other and more expensive agents in our sea-side towns and villages would doubtless confer many advantages. It could be used, for example—with desirable effect doubtless—to flush the headings of drains and sewers; it could be discharged into sewage outfalls; and, lastly, the system could be applied on a small scale for the sanitary treatment of hospitals, barracks, etc., by means of an automatic electrolyzer worked from a central electric supply. It should be added that, except as regards what has already been published in our columns, no particulars in regard to the actual cost of production have as yet been furnished by the originator of the main idea.

An Interesting Law Case.—An action for damages has just been tried in one of the Paris courts which perhaps is unique of its kind. A gentleman suffering from anæmia of a very hopeless type was advised by his medical attendants to submit to the operation of transfusion; and having consented, his gardener volunteered to supply the blood. Consequently transfusion was performed, and to the great benefit of the patient, who recovered completely after a short time. However, some time afterward the gardener fell ill, and attributed his condition to the sacrifice he made for his employer. He accordingly brought an action against him for damages, claiming the large sum of 60,000 francs, or nearly two thousand five hundred pounds. The court ordered an independent medical examination of the case; but in the meantime the man died, that is to say, two years and three months after the operation. The autopsy proved that the gardener had succumbed to a carcinoma of the stomach, and the doctors gave their opinion that the malady was not affected by the transfusion. However, the widow continued the suit, and last week the court dismissed the case with costs against the plaintiff.—*Medical Press.*

Physicians as Pioneers in Temperance Reform.—At the annual meeting of the British Medical Temperance Association on May 22d, Dr. Norman Kear said that, more than a hundred years before the beginning of the modern temperance reformation, the voice of medicine, by Dr. Baynard, in 1702, thundered against the milder intoxicant liquors. He characterized ales as "unwholesome and dangerous liquors," and suggested the making their sale criminal. A quarter of a century later Dr. George Cheyne, of Bath, commended abstinence as natural, healthy, and safe, and denounced moderate drinking as "unhealthy and dangerous." In another quarter of a century, in the *Universal Pharmacopœia*,

Dr. James (1747) approved the wisdom of Mahomet in forbidding fermented liquors to his followers. Seven years before the dawn of the nineteenth century, Benjamin Rush taught that no nourishment and no strength were found in spirituous beverages, followed a year later by Erasmus Darwin, who stigmatized wine as a pernicious luxury, injuring thousands. In the first days of the present century Beddoes declared that wine, constantly taken moderately, was mischievous and enfeebling; immediately after whom Trotter, while also declaiming against wine, reprobated beer as a poisonous morning beverage. Over sixty years ago Physician-General Cheyne ardently championed abstinence, as did Dr. Daniel Richmond, of Paisley, who was one of the founders of one of the first teetotal societies in 1832. To these pioneer temperance champions fell to be added, prior to 1876, when the British Medical Temperance Association was founded, among a host of medical abstainers, such outstanding men as Professor Rolleston, of Oxford, Menzies and Burn, of Edinburgh, Kirk, of Greenock, Linton, of Aberdeen, McKenzie, of Inverness, Grindrod, of Manchester, Beaumont, of Bradford, Higginbotham, of Nottingham, Fothergill, of Darlington, Collenette, of Guernsey, Clay, of Manchester, Mudge, of Bodmin, Thompson, of Bideford, and Henry Munroe, of Hull. Though the medical profession had often been abused for opposing the temperance cause, it was remarkable that from the ranks of medicine had gone forth unsparing condemnation of beer and wine before the early temperance pledge of abstinence from ardent spirits alone had been publicly proclaimed. In proof of the sympathy of medicine and surgery with temperance, Dr. Kerr cited the three great medical declarations on alcohol, the first in 1839, given by Julius Jeffreys, the second in 1847, by John Dunlop, the third in 1871 by Mr. Ernest Hart and Mr. Rae.—*British Medical Journal.*

Therapeutic Wisdom.—The *American Druggist* says that among the queer collection of stolen and confiscated goods, in the private office of Police Inspector McLaughlin, is a medicine chest containing six compartments, each with five small bottles from "Caswell & Massey." On the inside of this case, written in Gothic text, was this stanza:

> For every ill under the sun
> There is a remedy or there's none.
> If there's one, try and find it;
> If there's none, never mind it.

Some New Methods of Treating Diseases of the Stomach and Intestine.—Rosenheim (*Berl. Klinik*, May, 1894) first discusses the stomach douche. He uses a tube with numerous side-openings and one larger terminal opening. Under pressure the water issues from all these orifices, and in this way all parts of the stomach are acted upon. The douche is used morning and evening. By this method syringing with force against the stomach-wall is avoided, and by using the douche when the stomach is empty, matters serving for nutrition are not abstracted. The douching is more easily done by the patient, and the tube does not get blocked. Besides warm douches, which are sedative and but slightly stimulating, water containing common salt, chloroform, silver nitrate (1 in 1,000) may be used. The douche is useful in nervous dyspepsia, chronic gastric catarrh of moderate severity, and in severe affections of the sensory and secreting apparatus of the stomach, as in gastralgia, hypersecretion. The addition of sodium chloride to the fluid is said by the author to increase the HCl production, and that of silver nitrate to diminish it. After the stomach is washed out once or twice, the silver solution is run in and allowed to remain half a minute. The procedure is unattended with danger provided the pylorus be not incompetent. The pylorus is rarely incompetent, and this is readily ascertained by blowing the stomach up. As regards the electrical current, the exact indication as to the kind is still in doubt. For motor insufficiency, the value of electrical treatment is unquestionable. The author thinks it also allays sensory irritation symptoms; galvanism should be used here with the negative pole in the stomach. He then speaks of recto-abdominal galvanization in cases of motor weakness of the intestine. A case is cited to show the value of electricity even when the irritation symptoms and pain in the stomach are due to organic disease, probably a cicatrized ulcer The author then discusses the treatment of gastric ulcer with large doses of bismuth. He gives ten grains of bismuth subnitrate in two hundred grains water in the morning on an empty stomach, and fifty grains of water are drunk a little later. Finally, the author speaks of the treatment of spastic constipation by large oil clysters: four hundred to five hundred grains of pure oil are injected, and this is followed, if necessary, by a water enema later; the injections are given daily at first. Instances are given of the good results of these various methods of treatment.—*British Medical Journal.*

The Cause of Cancer.—The weight of evidence seems to point, then, to the "sporozoa" as nothing more than degeneration products of the epithelial cells. This view is held by the majority of those who have studied them, and is supported by the irregular shape and occurrence of the bodies, by the well recognized tendency of the cells of carcinoma to undergo degenerative changes, by the more abundant occurrence of the bodies in the medullary variety of carcinoma in which the degenerative changes are most frequent, and in the epitheliomata (flat-celled carcinomata) of the skin in which more or less ulceration and degeneration have been present. The nature of the degeneration is undoubtedly different in different cases. Some of the appearances are explained as the result of degeneration of the nucleus, some as the result of degeneration or vasculation of the cell body, and some as the result of penetration of leucocytes, red corpuscles, or other cells into and between the bodies of dead or degenerate cells of the tumor. Stroebe concludes that, while a possible parasitic origin of carcinoma cannot be definitely denied, there is as yet no positive evidence whatever in favor of such a view.—*American Journal of Medical Sciences.*

Worse than the Climate of Colorado must be that of the Himalayas, if one may generalize from the experience of Mr. Conway in that region. In a recently published book on "Climbing and Exploration in the Karakoran Himalayas," in speaking of the rapid changes of temperature, he relates the experience of his party. One morning, on the way from Gargo to Gilgit, they encountered a violent storm. The wind blew a gale, the snow was so thick as to darken the sky, and the cold was intense. Suddenly "the wind ceased, the sun came over the edge of the hill and drove the frost away; the brook began to tinkle again, a cuckoo called from the birch scrub across the glacier, and a bumblebee droned around the tents. A more sudden change it would be impossible to imagine. The sun was soon too hot, and within two hours the temperature—which had been down to 15° F.—rose to 80°."

A Good Fee.—The barber who cut Louis XIV. for fistula in ano received a present from his grateful patient of $60,000, a fine estate, and a patent of nobility.

Woman Is Not Fit to Practise Medicine; she is not fit for the elaboration of the arts and the enlargement of the sciences, nor is she fit for politics. To prevent misconception we hasten to add that these are the words of Dr. Abeken, of St. Louis, and not ours.

The French Language in Japan.—The foreign professors in the medical department of the University of Tokio are chiefly Germans, and the students are obliged to learn that language. Until recently, says *l'Union Médicale*, they were also required to learn English, but they have now requested the government to allow them to learn French instead of English, giving as the reason for the change that "Pasteur and Charcot have no equals in England, and they (the students) wish to be able to read the works of these two savants."

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Original Articles.

CASES OF OSTEOPLASTIC RESECTION OF THE SACRUM.

BY FRED. KAMMERER, M.D.,

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IT is now generally admitted that the only way of dealing effectively with certain ailments of the rectum, especially its upper parts, is by approaching the seat of disease from the posterior wall of the pelvis. It is possible that after greater experience with the technical difficulties of the methods based on incision of the soft parts only has been gained, the latter may rival those procedures, which require the permanent or only temporary removal of parts of the bony structure of the pelvis as a preliminary measure. At present this is not the case. The exposure of the rectum from behind, with removal of the coccyx and part of the sacrum, is still regarded by most surgeons as better adapted to the end in view than simple incision in the parasacral region (Woeffler) or through the soft parts lying between both tuberosities of the ischium (Schelkly).

Since Kraske's publication, about eight years ago, quite a number of modifications of the original have been proposed.

At first the plan of removing permanently parts of the sacrum and the coccyx seemed to be most in favor, some difference of opinion existing among surgeons as to the line of incision through the bone. Thus Kraske originally removed besides the coccyx that part of the sacrum on the left side lying below the third and including the fourth sacral foramen, but not extending to the middle line (*a b c*). Hochenegg modified Kraske's incision to include part of the right half of the sacrum (*a d*), and Bardenheuer recommended transverse section of the bone below the third sacral foramina (*a e*, Fig. 1). Even after removal of so large a

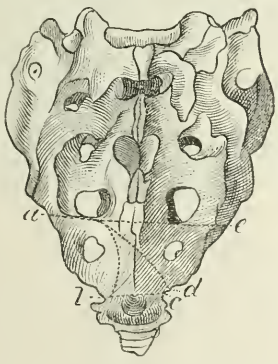

FIG. 1.

piece of bone as in Bardenheuer's operation, very little discomfort, if any, has been experienced by the patients who have recovered from these operations. As drawbacks of these methods by which parts of the bone are sacrificed, have been mentioned weakening of the floor of the pelvis, interference with the functions of bladder and rectum, loss of the point of attachment of the sphincter ani muscle at the tip of the coccyx with consecutive disturbance of the function of that muscle and kinking of the rectum, due to contraction of the cicatricial tissue about the end of the divided sacrum. In a former article [1] I mentioned that I had not myself observed any of these symptoms after removal of the lower end of the sacrum, but others have occasionally seen them. On the whole, I believe they are very rare. We should therefore demand of the osteoplastic methods that they possess technical advantages, if they are to be preferred to the more radical measures just mentioned. Is this really the case? It does not seem to apply to the methods of Hegar, Kocher, and Levy. These are technically more difficult, and are said by others to unnecessarily complicate wound treatment. I cannot, however, speak of them from personal experience. I was, on the other hand, more favorably impressed by the plan, which Rydygier [2] recommended about a year ago, and after giving it

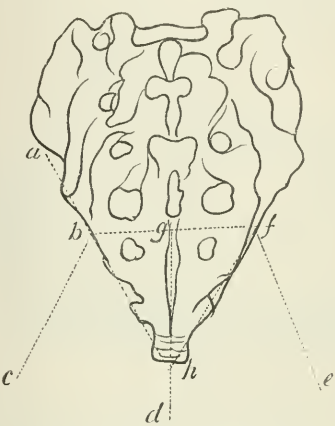

FIG. 2.

a trial in six cases, prefer it to either the methods of Kraske, Hochenegg, or Bardenheuer, which I have formerly employed. Fig. 2 shows the various incisions through the sacrum for temporary removal of the lower end of that bone and the coccyx. Hegar's incision, *d h b f*, separating the bone but not the soft parts in the line *b f*, has for its object the elevation of the flap *b f h* on *b f* as an axis. Kocher splits the coccyx and sacrum in the median line and then adds a transverse section of the bone (*h g f*, *h g b*), turning the flaps thus formed to both sides. Levy makes a transverse incision (*b f*) over the sacrum and from its ends adds two further incisions running downward and outward (*b c*, *f e*). After dividing the bone in the line *b f* the flap is turned downward. Rydygier incises the soft parts, beginning at the posterior superior spine of the ilium on the left side and running down to the tip of the coccyx, thence in the median line to the anus (*a b h a*). After division of the sacro-sciatic ligaments, the soft parts are removed from the anterior surface of the sacrum by the hand of the operator. A transverse incision is then added below the third sacral fora-

[1] MEDICAL RECORD, February 20, 1892.
[2] Centralblatt für Chirurgie, No. 1, 1893.

mina (*b f*) and the bone divided along this line with a chisel. The flap *f b h* is now turned to the right side, upon *h f* as an axis. With a retractor inserted at the tip of the flap (*b*) the latter can be easily held aside and manipulations about the rectum can be as readily carried on as when the bone has been entirely removed.

Case I.—M. A. S——, aged forty-two; native of Ireland. In the summer of 1892 she began to suffer from tenesmus and bloody stools, and was treated for hemorrhoids. The nature of her complaint being later on recognized, she was sent to St. Francis Hospital for operation. On examination a cancer of the rectum was discovered, beginning immediately above the sphincter ani on the posterior wall, occupying the lateral walls of the rectum, but leaving a small portion of the anterior wall of the gut intact, into which the exploring finger could be barely placed. The upper end of the neoplasm was not reached.

March 22, 1893.—Rydygier's osteoplastic resection of the sacrum in the knee-elbow posture, in the presence of Dr. E. W. Cushing, of Boston, and Drs. William Polk and George Edebohls, of this city. Very slight hemorrhage during incision of the soft parts, only a few ligatures being necessary. Division of the sacro sciatic ligaments. It was then a very easy task to separate the soft parts from the anterior surface of the sacrum with the aid of the index-finger, keeping the latter well against the bone. The transverse incision was carried immediately down to the bone, and a chisel about an inch wide was employed in severing the latter, beginning at the left border and moving the instrument over the posterior surface of the sacrum to the right. With a few strokes of the mallet the bone was very quickly divided. After elevation of the flap to the right and dissection of the tissue covering the rectum, it now became apparent that it was impossible to save the sphincter ani. The anus was, accordingly, circumscribed by a new incision and the entire lower end of the rectum separated from the surrounding tissues. After free incision of Douglas's pouch and further separation of the rectum as far as the promontory of the sacrum, more especially after incision of the lateral folds of the peritoneum, forming the reflection from the sacrum upon the rectum, the gut was easily drawn down, so that the tumor lay well outside the anal opening. After the closure of the peritoneum with interrupted catgut sutures, amputation of the rectum was done about three-fourths of an inch above the border of the tumor and the end of the gut sewed to the margin of the wound at the site of the normal anus. Iodoform-gauze tampons were then placed upon, and to each side of, the new rectum, their ends protruding from the wound-cavity just above the new anus. The flap was now returned and everywhere united by sutures of silk-worm and cat-gut, excepting the parts where drainage was to be established by the gauze leading from the wound-cavity. Dry aseptic dressing externally. The tampons were removed for the first time on the fifth day, the external dressings having been changed quite frequently. Primary union occurred throughout the sutured area. Recovery uninterrupted. Complete cicatrization at the end of the sixth week. Length of the amputated portion about five inches.

September, 1893.—Removal of a small recurrence between rectum and vagina.

April, 1894.—Patient in fair health (Fig. 3 shows condition of external parts). There is now a recurrence on the posterior wall, for which the patient will allow no further operative interference. There is apparently firm union of the bone at the site of division and the appearance of the parts externally is, but for the line of union, normal.

Case II.—G. R——, aged sixty-eight. Has been complaining of rectal trouble for the past two years (pain during defecation and hemorrhages). Large circular cancer of the rectum, mostly on anterior wall, several inches above the anus. Cachetic appearance. Very marked atheromatous degeneration of arteries.

April 26, 1893.—Osteoplastic resection. Flap dissected up, as easily as in first case; no hemorrhage to speak of; resection of rectum after enucleation of the same from the surrounding tissues; division of the rectum below the tumor, leaving about two inches at the anal end; incision of the peritoneum; resection of about four inches of the gut; suture of the divided ends

Fig. 3.[1]

with catgut; extirpation of many sacral lymphatics which are involved; drainage with gauze; flap replaced and sutured as in first case. Profound collapse after operation, from which the patient rallies well in a few hours. Early the next morning he very suddenly expires shortly after drinking. Autopsy not allowed.

Case III.—A. B——, aged twenty; married. Nine months ago, double salpingo-oöphorectomy was done in this city, in consequence of which a fecal fistula remained. When first seen at the German Hospital in September, 1893, was in poor general condition. Several fistulous openings, from which pus and fæces came away, were found in the cicatrix of the abdominal incision. They all led to a subcutaneous abscess cavity, which in its turn, when incised, communicated at the lower end of the original incision with the gut through a long fistulous track, leading downward and backward into the pelvis. A probe introduced into the fistula passes to the left of the uterus and vagina, but the point of communication with the rectum cannot be found. Feeling assured, however, that it did exist and that, on account of probable adhesions, it would prove a hazardous undertaking to attempt reaching the seat of trouble by an anterior incision, I decided to do osteoplastic resection of the sacrum and thus to get to the opening in the gut.

The operation was conducted as in the other cases, with the only exception that the patient was placed on her right side, with flexed lower extremities and elevated buttocks. Considerable hemorrhage occurred and there was a good deal of delay on this account in elevating the flap. Introducing a probe into the fistula, the point of which could be felt from the posterior wound high up on the anterior surface of the rectum, I attempted to reach this point by dissecting off the rectum on the left side. While thus occupied, the patient went into a deep collapse, which necessitated immediate interruption of the operation, from which she only fully recovered after many hours. The wound-cavity had been hurriedly tamponed and no sutures were applied to the flap. In the course of the following two months the cavity gradually filled with granulations and the flap fell into place. At the end of this time the flap was again raised and the

[1] Dr. Fischlowitz, house-surgeon of the German Hospital, has very kindly taken the photographs used in this article for me.

same plan pursued in attempting to reach the opening in the rectum. After much labor I finally came upon a small cavity, the size of a walnut, on the anterior surface of the rectum, far above the plane of Douglas's pouch. There I found the point of the probe. I could just reach the cavity with the tip of my finger, but could not find the intestinal lesion. A tampon was pushed down into the cavity in the hope that it might heal by granulation and the fistula thus close. The entire line of incision was again left unsutured. The wound has filled with granulations. No more fæces have escaped during the last two months, either by the anterior or posterior fistula, both of which still exist, however, but are apparently closing. The incision along the left border of the sacrum is still open for about two inches, and several attempts to close it by secondary sutures have failed. The general condition of the patient is excellent.[1]

Case IV.—J. F——, aged forty-five, recto vaginal fistula in the upper part of vagina after extirpation of the uterus for cancer. An attempt to close the same from the vagina failed and the patient was transferred to my service at the German Hospital for osteoplastic resection of the sacrum. Knee elbow posture; after elevation of the flap the fistula was exposed by separating the tissue to the left of the rectum. Considerable difficulty was experienced in separating the rectum from the vagina; when this was accomplished the edges of the large opening in the vagina were excised and the opening itself carefully sutured; an iodoform tampon was introduced, but the opening in the rectum was left unsutured. The flap was returned, and the transverse and the vertical incision below the coccyx were united by sutures. That part of the incision lying to the left of the sacrum was left open, and from it the tampon protruded. The latter was left undisturbed for eleven days, when the bowels were moved for the first time. Very soon the introduction of the tampon to the site of the old fistula became difficult, as the wound-cavity began to cicatrize very rapidly. However, while there appeared to be union in the vagina, some fæces were naturally discharged by way of the tampon through the wound-cavity and opening in the rectum.

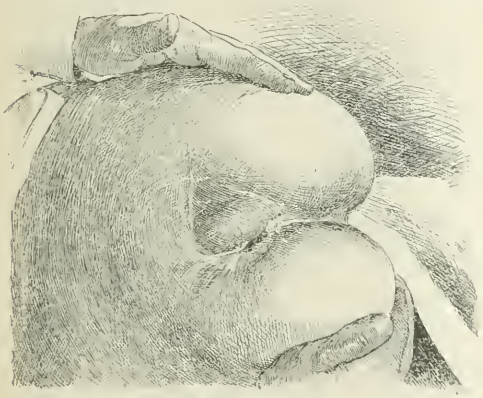

Fig. 4.

At this time it became apparent that a small fistula had again formed in the vagina Fig. 4 shows the condition of the external parts three months after operation. The opening to the left of the sacrum for the tampon is the only portion of the original incision which has not closed. I now intended to make an artificial anus and to again elevate the flap later on, but I abandoned this idea on discovering extensive secondary infiltration of the lymphatic system of the pelvis. The wound has not entirely closed yet, about four months after operation, but no fæces escape from it, and only when the movements are liquid does fecal matter escape from the vagina.

Case V.—H. B——, aged fifty-eight. For the last two years blood in stools and lately great difficulty in defecation; general condition poor. Two and a half inches from the anus a cancerous growth, almost entirely occluding the lumen of the rectum, through which the examining finger cannot be passed.

December 21, 1893.—Left inguinal colotomy. Following this for several weeks irrigations of the rectum, three or four times daily, from anus through the colotomy-wound.

January 18, 1894.—Osteoplastic resection of sacrum in knee-elbow posture. Resection of three and one-half inches of the rectum, after incision of Douglas's cul-de sac; about one and one-half inch of the anal end is left, which is sutured to the upper end of the rectum in its entire circumference; flap returned and sutured throughout, with exception of opening for drainage below the coccyx. The peritoneal cavity was not closed by sutures in this case, but tampons of gauze, placed to each side of the rectum, were brought well up to Douglas's pouch. Uninterrupted recovery. Primary union, with exception of posterior circumference of the sutured gut, where separation and slight sloughing occurred (Fig. 5). At the end

Fig. 5.

of March a small opening was still present below the coccyx, which communicated with the rectum and marks the spot at which the rectal sutures gave way. Here there is a stricture of the gut.

March 30th, flap again raised. Excision of stricture. Finding it impossible to unite the two ends of the rectum on account of tension, the plan, recommended by Dr. Lange of this city, of transplanting the anus upward and backward after a transverse incision in the perineum between both tuberosities of the ischium was adopted. After carrying the incision well up between vagina and rectum, the anus could be moved for about one and one-half inch, making suture of the approximated ends possible. The transverse incision in the perineum was united with silk-worm gut in a longitudinal direction. After the flap was again returned the anal orifice was found immediately below the coccyx. The anus has remained *in situ*, but some separation occurred in the perineum. The artificial anus still remains to be closed.

Case VI.—S. R——, aged seventeen. Always well as a child. Four years ago severe attack of diarrhœa, with frequent repetitions of the same during the following two years; then constipation, with much straining during defecation and loss of blood and mucus. Anæ-

[1] The posterior incision is now about entirely closed, three months later.

mic and emaciated girl. Beginning about three or four inches above the anus and extending upward, as far as the finger could reach, were a large number of polypoid growths. Left inguinal colotomy on December 18, 1893. Just below the longitudinal incision into the gut a polypus about one and one-half inch long and measuring about one-half inch in its widest part, with a very slender pedicle, is found and removed. Microscopical examination by Dr. Schwyzer, assistant pathologist to the German Hospital, showed it to be an adenomatous polypus.

January 20, 1894.—Osteoplastic resection of sacrum in knee-elbow posture. Longitudinal incision of the rectum, beginning about four inches above the anus and running upward for two or three inches. The entire mucous membrane lined with small and large growths of the kind described, as far as the finger can be passed upward in the gut. Finding it impossible to remove the growths individually, on account of hemorrhage and, above all, their location, I removed what I could with a long and large Volkmann spoon and tamponed the rectum, as hemorrhage during this manipulation was quite alarming. No suturing of the flap; tamponade of the wound cavity with sterilized gauze; marked collapse, but patient rallied well. Iodoform tampon in rectum removed on the fourth day for the first time, after which the temperature, which had ranged from 101° to 102.8° F., dropped to normal.

March 2, 1894.—Closure of the artificial anus and of the longitudinal incision in the rectum. For the latter a good deal of dissecting out of the rectum was necessary;

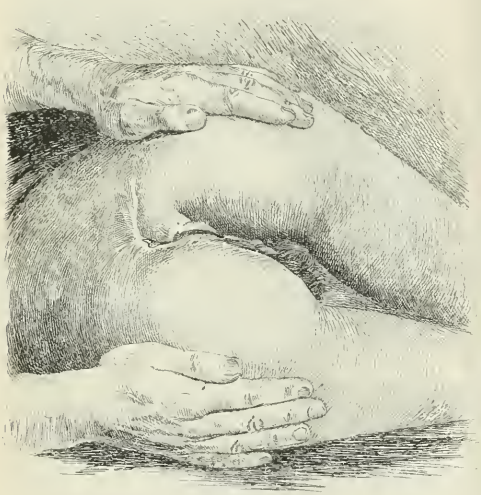

Fig. 6.

silk sutures, tampon of sterilized gauze. On April 6, when it is evident that perfect and firm union has occurred in both places, the resection flap is finally returned to its original position and retained there by several strong silk sutures. These sufficed to keep it in place, the anterior surface of the sacrum having meanwhile become adherent to the rectum. The original incisions are still granulating, but will no doubt soon close (Fig. 6).

The improvement in the patient's condition is very marked. The hemorrhages from the rectum have ceased entirely, and there is no pain during defecation, which occurs normally. The patient has gained very much in weight.[1]

In all these cases I have been impressed by the rapidity with which this preliminary operation can be done. While deprecating in general any time limit in surgical work, it is surely an advantage to accomplish something in from five to ten minutes, which otherwise requires a longer time, at least in my own experience, and that with decidedly less hemorrhage. I fully endorse Rydygier's claim, that his osteoplastic resection is a much less bloody operation than the permanent removal of coccyx and sacrum by any one of the other methods with dissection of the soft parts from the posterior surface of the sacrum. In only one instance of osteoplastic resection did I meet with considerable hemorrhage, in Case III., where I operated in the lateral position. I consider the knee-elbow posture, which I employed in all the other cases, with distinct elevation of the pelvis, especially of the sacral region, as the most desirable one for rectal surgery, since it controls hemorrhage through elevation, gives excellent access to the field of operation, the surgeon standing between the slightly separated thighs of the patient, and facilitates manipulations with the chisel, the pelvis being supported by sand bags placed under the anterior iliac spines.

When the flap, including the coccyx, part of the sacrum and the integuments, can be, from the nature of the case, returned to its place and sutured, the result will be an ideal one as regards restitution of the normal contour of the sacral region, as shown in Figs. 3 and 5. In suturing the transverse incision I have always passed the needle down to the bone, but have never included the bone itself in a suture, by any device whatever. Notwithstanding, in several cases in which I have had to elevate the flap a second time, I have always found firm union of bone surfaces, either fibrous or partly osseous. It is unfortunate that secondary operations so frequently become necessary in rectal surgery, for, even when we have resected the rectum and made a circular suture of the ends, we frequently find that the latter gives way on the posterior circumference of the bowel. Such, at least, has been my own experience and the experience of others as well, I believe. I have not, however, found the operation of raising the flap a second time any more tedious than the first. Greater care must only be exercised to avoid the rectum, which now has been drawn close to the anterior surface of the sacrum by cicatricial contraction. But I think, when we are dealing with cases, such as fistula for example, where tamponade of the wound-cavity becomes necessary for some time, we should resist the temptation of suturing the flap and we should leave the wound-cavity entirely open. My attention was forcibly directed to this point by Case IV. (Fig. 4), where I got very good union of the transverse and vertical incisions, but in which case a successful tamponade of the deep wound-cavity (about six inches) was not easily effected through the small opening corresponding to the unsutured part of the original incision. I think this fact was responsible for the ultimate re establishing of a small vaginal fistula. Such wounds ought to heal from the bottom of the wound-cavity to avoid even the slightest retention, endangering the object in view, and the best guarantee for this is a wide opening, allowing free inspection and tamponade.

Where no sutures are used some retraction of the flap develops after a time. This is no doubt much less than in flaps that are without a bony substratum. Even when only the lateral incision to the left of the sacrum has remained open (Fig. 4) a distinct elevation of the soft parts over the sacrum results from the same cause, a deformity which can, no doubt, at the proper time be very readily remedied by an insignificant plastic operation. This is not so readily accomplished when no suturing at all has been done. There is another fact worthy of consideration in this connection. It is this: After some time secondary operations on the rectum are even more difficult than the original ones, owing to the development of much cicatricial tissue about the gut, which makes the latter more rigid and does not in consequence permit the approximation of such parts which we may desire to unite by sutures. From all this we may conclude that it will

[1] I have just seen the patient three months after the above was written. She continues in excellent health. There is still a point of granulation to heal, but no fistula.

be wise to do secondary operations as soon as the condition of the patient will permit.

The cases of fistula which I have reported have not been entirely cured. They have been much benefited, however, and one of them is very likely closing. I firmly believe that in no other manner ought these cases to have been approached, certainly not by an anterior laparotomy.

While technically difficult, the sacral route is still the easiest way to get at the seat of disease when the rectum is affected, and also in some cases in which the uterus is to be dealt with. Rydygier's preliminary operation is certainly well devised, and being as simple as the permanent resection of the sacrum, while not disfiguring, assuredly deserves preference.

A CASE OF ACUTE SOFTENING OF THE BRAIN.

By PHILIP ZENNER, A.M., M.D.,

CINCINNATI, O.

CLINICAL LECTURER ON DISEASES OF THE NERVOUS SYSTEM IN THE MEDICAL COLLEGE OF OHIO.

DR. DILLER'S case of acute softening of the brain, published in the MEDICAL RECORD of April 28th, leads me to report the following case, which was also, for a time, believed to be one of hysteria, and in which, as in Dr. Diller's case, the paralytic manifestations were very slow in onset. I regret that my notes of the case are not more complete.

Mrs. S——, aged fifty-three. A brother and sister died of paralysis. She was always in good health until forty-six years of age, the time of the menopause. At this time, too, her husband had a long and serious illness, and underwent a dangerous operation, all of which doubtless assisted in developing her subsequent nervous malady.

One of the first physicians whom she consulted for her nervous symptoms—headache, vertigo, etc.—told her that she had a brain tumor, a diagnosis which was supposed to have had a permanently ill effect upon her; at least she was thereafter in constant dread of organic nervous disease. She never regained her former good health.

It is difficult in a few words to give a clear idea of the varied symptoms presented during the seven or eight years of her invalidism. Her chief complaint was of various paræsthesias, tingling sensations or the like, which never left her altogether. At first they were only in the left hand and arm, subsequently they were in the right arm or both arms, and in the face. Such sensations in the mouth prevented her from wearing her false teeth with comfort, so that for several years she did not wear them at all. Very often she would say there was no strength in her hand, she would not cut her meat, etc., though there was no evidence of paralysis.

At one time when I was called to see her I was informed that for months she had been unable to write. On questioning her she could not tell why, could only say she was unable to write; and seemed very much rejoiced when by a firm order on my part I succeeded in getting her to write. The same was true of reading. Often for months she said she could not read. She often had a peculiar disturbance of speech, something similar to aphasia; she would have to grope for words or sentences, speak only short sentences or only a word or two, and then halt as if unable to proceed farther. She would sometimes use the wrong word. But she could always give the name of an object or individual. This speech defect was much worse when emotional, and very much less when she was calm. She had also various vaso-motor disturbances, redness, swelling, and perspiration, in various parts. With her nervous symptoms there was a complete change in her whole being, from a cheerful active woman interested in and interesting to everybody, to one who attended to and was interested in nothing, crying, despondent, her mind dwelling only on her many ailments.

The symptoms, of which only a few have been mentioned, varied much in intensity. At times they were so severe as to make life a burden to herself and her family; again, after a sojourn at the sea-shore, or in the South, she improved so much as to be comparatively well, though still far from being her old self. Her health was thought to be the best it had been since she first took sick, just before the occurrence of her last and fatal malady.

About January 6 or 8, 1894, she began to complain of pain in the right arm. A few days subsequently she said to her physician: "You see my arm is paralyzed." On examining her he found that she could move the arm freely. He saw no evidence of paralysis, and tried, in vain, to convince her of this fact. But it was soon observed that she could not move the right hand, and in a day or two the right elbow, and after an interval of a day or more, the right shoulder also became affected.

I saw her January 14th. She walked with difficulty, leaning upon an attendant for support, but the strength of the different groups of muscles of the legs appeared to be good, a rough test indicating that the muscles of the right leg equalled in strength those of the left. The right hand was altogether powerless, and there was but little strength in the muscles of the right elbow and shoulder. She felt a light touch everywhere on the right arm and leg, but on the arm the touch was not quite so well localized as on the left arm. Tendon reflexes normal, cranial nerves, fundi oculi normal, no headache.

The patient was in an hysterical emotional state, cried and laughed alternately, the feelings appearing to be very superficial. On account of either mental confusion, or inattention, or impaired speech, there was little satisfaction to be obtained from her statements. She spoke little spontaneously, often seemed not to grasp the meaning of a question, or paid no heed to it. When she spoke it was in a faltering manner, seeming to have difficulty in finding and arranging her words. This mental state did not appear to be a new feature. Like conditions had frequently been observed in bad periods in former years. But the apparent mental confusion was greater; this and the appearance of a new symptom, paralysis, was all that distinguished her condition now from what was often observed in her before.

I saw her again January 17th. Her mind was more blunted. She scarcely spoke any, and paid little heed to questions, so that the examination of subjective states was not satisfactory. She was now confined to her bed. She apparently could not move the right arm at all. She could move the lower extremities freely, though the degree of strength could not be tested. The prick of a pin was felt everywhere.

After my second visit an examination of the field of vision was made by an oculist. By an oversight this had not been made sooner. He found concentric contraction of the field of vision of each eye. I shall give my reasons further on for believing this observation was not accurate.

The chief change in the following ten days was a constantly increasing mental apathy, and disinclination to speak or to move, and that she ate less and less. The paralyzed arm was somewhat rigid much of the time, so that there was some resistance to passive movements. The latter were often painful. The pulse was strong, in the neighborhood of 80, temperature mostly normal.

February 1st.—Strong faradic brush applied to right arm and leg very painful, in leg produced a movement, a flexing at the same time of hip, knee, and ankle, but the arm remained motionless. Temperature in left axilla, 98°, in right, 99.8° F. Can scarcely get any response from patient except an occasional "Yes" and "No."

February 3d.—Cathartic given, and bed soiled, of which she is altogether regardless. Eats very little, hebetude extreme, temperature 98.5° F. in each axilla.

February 4th.—Did not speak a single word. Lies almost motionless, takes scarcely any food.

February 5th.—I found her in the morning in a comatose condition, breathing heavily, face somewhat flushed, pulse 90, temperature 103.1° F. in each axilla. A very slight movement of the left arm and leg could be produced by deep pricking, right extremities motionless and flaccid. Breathing regular. Some puffing of the lips with each respiration, but lips close in swallowing (swallowed a little fluid). When eyelids lifted, eyes were seen to move restlessly to and fro.

During the day the temperature subsided somewhat and her condition appeared a little better. There had been a deep burn on right leg a week before through an accident with a hot brick. Pressure in this to day caused a movement of right leg with other manifestations of pain.

On subsequent days there were slight fluctuations in her condition, temperature varied from 99 to 102.5.° F., usually one to one and one-half degree higher on the right than on the left side; pulse remained good, until the last day or two of life when it became rapid and feeble. She swallowed liquid food without much difficulty. She was sometimes in apparently sound sleep, and at times even manifested a certain degree of consciousness, opening her eyes, moaning "Oh, my;" and the nurse thought that she distinguished between food and bad-tasting medicine. The breathing had at times something of the Cheyne-Stokes character, at other times it was heavy, labored, attended by paralytic puffing of the lips and cheek, again there were intermissions of quiet healthy breathing.

February 7th.—It was first observed on this date that the tendon reflexes in right arm were heightened, and they remained so until the end. In the right leg the tendon reflexes were at no time excessive. There was no subsequent movement of left leg, excepting not infrequently a kind of tremor or clonic spasm. On some occasions the left hand was found in a state of contracture. During the last few days of life, the only evidence that a pin prick was at all felt was that it sometimes was followed by a movement of the left leg. There was at no time true facial paralysis.

During the last week of life there was a tendency to keep the face turned toward the right. If the head were straightened she manifested pain. She died February 12th.

Only the contents of the cranial cavity were examined *post-mortem*. There was a lepto-meningitis of light grade confined to the pia covering the convexity of the hemispheres, and most marked over the softened areas. The beginning of the right middle cerebral artery appeared narrowed and thickened, but the vessel beyond was patulous, and not collapsed. Otherwise the vessels at the base were normal.

Three areas of softening were found on the surface of the hemispheres. The largest and, probably, oldest was in the left motor area. It destroyed almost the entire upper two-thirds or three-fourths of the central convolutions, and a small part of the contiguous frontal and parietal lobes. The softening extended deeply into the centrum ovale, but did not reach the lateral ventricle. The paracentral lobule was unaffected.

The second area of softening was in the right occipital lobe. Almost the entire lobe was affected, the softening reaching to the posterior and inferior horns of the lateral ventricle. The third and smallest, and, perhaps, most recent softening, was in the posterior part of the second frontal convolution. The lesion just impinged upon the ascending frontal convolution. The softening extended about one-fourth of an inch into the white matter.

The other parts of the brain, as far as could be judged by naked eye appearances, were altogether normal.

Remarks.—The case illustrates the difficulties and uncertainty in the diagnosis of hysterical paralysis; also that the presence of hysterical conditions—upon which the diagnosis, hysterical paralysis, must always chiefly rely—does not preclude the existence of organic disease. This was regarded as a case of hysterical hemiplegia, until its gravity revealed the presence of organic disease.

The features of the case which lent it its hysterical aspect were the following:

1. A history of repeated hysterical manifestations, and the recurrence in the last illness of similar manifestations. Furthermore, the paralysis was preceded by pain in the arm—pain often excites hysterical paralysis—and by the fixed idea that she was paralyzed. 2. The hemiplegia had peculiar features, ordinarily characteristic of hysterical hemiplegia. There was no facial paralysis, which is invariably true of hysterical hemiplegia. When the diagnosis hysteria was made the paralysis was not complete; and this is also the rule in hysterical hemiplegia. The paralysis came on very gradually. This is not uncommon in hysteria, whereas it is exceedingly rare as the result of a brain lesion, excepting in cases of tumor, abscess, sclerosis, or chronic softening, all of which could be excluded in this case.

Finally, the visual symptom, concentric contraction of the field of vision in each eye, is most frequently found in hysterical cases. But my impression is that this was a mistaken observation. The autopsy revealed a softening of the right occipital lobe, which would cause the loss of the left half of the field of vision in each eye. It is true we do not know that this lesion was already present when this examination was made; but inasmuch as at the time of the examination the mental condition of the patient prevented a careful and perhaps accurate examination, and the vision was tested for the very purpose of finding out whether the field was contracted or not, it is not improbable that the loss of one-half of the field was confounded with a contracted field of vision.

There were some respects in which this case did not correspond to the most common picture of hysterical hemiplegia. The paralysis was right-sided, the arm was more affected than the leg, and there was no anæsthesia; whereas in hysterical hemiplegia the left side is usually affected, the leg more than the arm, and there is often more decided loss of sensation than of power. But these differences are too common to have much weight in diagnosis.

This, then, is one of those not uncommon cases where an hysterical subject, with hysterical symptoms, has organic disease. The peculiarity of this case was that, while the patient's history led to the expectation of new hysterical manifestations, the new symptom in this instance, the hemiplegia, had in itself so much that is commonly characteristic of hysteria.

The most striking feature of this case is the gradual onset of symptoms. From the very beginning there was a steady progress of the symptoms, from day to day, almost to the very end. This was true of the motor paralysis and the mental impairment. This is not the mode of onset and course in cases of acute softening. Wernicke describes a very rare disease, which he terms chronic softening of the brain, wherein there is a very slow and gradual increase of motor and sensory paralysis, which may continue for months or even a few years, a disease which Wernicke believes to be of an inflammatory character. But acute softening, which is due to the occlusion of blood-vessels, usually produces symptoms which are more or less sudden in onset. When the cause is embolism the symptoms are always ushered in abruptly; and this is, also, largely true in cases of thrombosis. Even in cases of senile softening of the brain, where the slow appearance of symptoms is most likely to be found, the latter mostly occurs as a series of slight attacks. In Dr. Diller's case, which belongs to this order and where the gradual onset was uncommonly well marked, the phenomena are explained by the unusual pathological condition found. But my own case was not one of senile softening, and I do not know of another of its kind in which occurred such a gradual development of paralysis.

In part the latter was due to the multiple lesions, which doubtless occurred one after another. Very likely the lesion in the left central convolutions appeared first, then that in the right occipital lobe, and finally the area

of softening in the right frontal lobe. The latter probably accounts for the attack of coma which came on a week before death, and for the loss of power in the left extremities, though the lesion only slightly encroached upon the motor area. That there was no facial paralysis is explained by the location of the lesion in the motor area.

SPLENECTOMY, WITH THE REPORT OF A SUCCESSFUL CASE.[1]

By W. J. CONKLIN, A.M., M.D.,
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Mrs. A——, American, aged twenty-nine, married, II-para, was admitted into St. Elizabeth Hospital, May 29, 1893. The following history was obtained. Her family record is without taint, menstruation normal, and general health but little impaired. Mrs. A.'s early life was passed in a highly malarious district in Southern Illinois, and up to her marriage and removal to Ohio she was subject to frequent attacks of chills and fever, and carried almost constantly an "ague cake" in her side. For several years she has been free from malaria and, aside from an attack of typhoid fever, has had no serious acute illness.

The symptoms of the disorder which now so seriously interferes with the discharge of her household duties, and for which she seeks relief, first showed themselves about two years ago. She then began to have abdominal and pelvic pains, and some months later discovered a lump low in the abdomen. Examination disclosed a solid, freely movable tumor, sensitive to touch, in the left iliac region, dipping into the pelvis, but not connected with the uterus, and a small cyst of the right ovary. The uterus was normal in size, but retroverted.

Dr. Jewett, during whose service she entered the hospital, made a cœliotomy, June 10, 1893. The solid tumor proved to be a displaced spleen about twice the normal size. It was free from adhesions and easily replaced. The right ovary, containing a cyst the size of a small orange, was removed. Left ovary normal. The abdomen was closed without drainage. Convalescence was uneventful. She was soon discharged with positive instructions to wear constantly a properly fitting abdominal supporter, with the hope of retaining the spleen in position.

Mrs. A—— was readmitted into the hospital during my service, September 23, 1893. Shortly after her return home she again began to suffer from pelvic symptoms, and for the past two months has had nearly continuous abdominal soreness and several severe paroxysms of pain, which drove her to bed. Her abdomen has been steadily enlarging.

Six days ago, while doing the family washing, she was seized with agonizing pain in the abdomen, which required for its control the administration of morphia. Vomiting of large quantities of bile-colored fluid began on the following morning, and still recurs at intervals. In spite of treatment the bowels have not been opened for more than a week. Temperature normal.

On examination, the abdomen was found tympanitic, very sensitive to pressure, and occupied by an immovable, solid tumor which completely filled the left side from the pelvis to the ribs, and extended considerably beyond the middle line. It could easily be touched *per vaginam*.

The former operation greatly simplified the diagnosis, and left no doubt that the tumor was the enlarged and inflamed spleen. The acute symptoms were attributed to intestinal obstruction, due either to pressure from the spleen or to adhesions at the seat of the ovarian stump. The symptoms grew steadily worse until forty-eight hours after admission, when the bowels responded freely to treatment, after which the vomiting ceased and her general condition improved. The respite was of short duration. The local tenderness, paroxysmal pains, and vomiting returned accompanied by fever. The temperature ranged from 99° to 101° for ten days, and measured 100° on the morning of the operation. Peritonitis had evidently supervened, and at a consultation of the hospital staff it was decided that the removal of the offending spleen offered the only chance of recovery.

The operation was made October 7th, with the assistance of Drs. Jewett and Humphreys, the patient having been anæsthetized by Dr. Reeve, Jr. The parietal incision, seven and a half inches in length, was made along the outer border of the left rectus. On exploring the spleen, contrary to expectations based on the revelations of the previous operation, it was found adherent to the abdominal wall, omentum, and intestines. The intestinal adhesions especially were firm and extensive, involving the entire under and inner surfaces of the tumor. Their separation consumed much time, and with the utmost care the capsule of the spleen was torn in several places. The peritoneum gave unmistakable evidences of active inflammation. The pedicle was long, twisted through three complete turns, and with its engorged and tortuous vessels resembled a huge umbilical cord. It was transfixed, firmly tied with heavy twisted silk, using the Staffordshire knot, and for greater security encircled with another turn of the ligature. The ligature was cut short and the pedicle dropped, a glass drainage-tube placed, and the wound, on account of the patient's condition, hastily closed.

The hemorrhage was slight and easily controlled. The shock, however, was profound and wholly out of proportion to the blood lost or the length of the operation. Hypodermatic injections of brandy and strychnia were freely used. Apart from the shock which threatened to prove fatal for hours after removal to bed, and the temperature which for twelve days measured from 99° to 101,° precisely as it had before the operation, there was nothing worthy of special comment during convalescence. No satisfactory explanation of the temperature curve could be found in the condition of the wound or patient, and indeed, without the thermometer it would not have been suspected. At no time was there swelling of the parotid or lymphatic glands. The spleen drained of its blood weighed four and a quarter pounds, and measured ten inches in length by five and a half inches in breadth. It was firmer in texture and darker in color than the normal gland. Microscopical examination, by Dr. Scheibenzuber, showed thickening of the trabecular and intercellular connective tissue and pigment in the vessel walls, "a chronic hyperplasia probably due to malaria." By an unfortunate oversight, no microscopical examination of the patient's blood was made before or soon after the operation; at present the proportion of the red and white corpuscles is normal. Seven months after the extirpation, the date of the present report, Mrs. A——, has grown very fleshy and reports that she is in excellent health save in one particular—an overpowering drowsiness. When quiet, it requires constant effort to keep awake. The habit seems to be increasing and is a continual source of annoyance and embarrassment.

It is not our intention to enter into a detailed discussion of the surgery of the spleen, but propose simply to supplement the above report with a few general comments.

Although practically a modern operation, splenectomy has a history which runs far back into the centuries.

Dionis (1733), quoted by Greig Smith, speaks condemningly of a sect of surgeons who achieved notoriety, about the close of the seventeenth century, from their operations of "unmilting," as removal of the spleen or milt was termed. The only successful total extirpations for disease recorded previous to 1867 were those of Zaccarelli (1549) and Ferrerius (1711), both of which have been discredited, probably erroneously, by many authors. In nearly all of the statistical tables, Dr. G. Volney Dorsey, formerly a distinguished member of this society and an accomplished scholar and surgeon, is credited with a successful splenectomy made in 1855. Ledderhose

[1] Read before the Ohio State Medical Society, May 17, 1894.

refers to this case as the first authenticated successful laparo-splenectomy on record. A reference to the original publication,[1] for which I am indebted to Dr. Billings, United States Army Medical Library, shows that Dr. Dorsey, in this very creditable pioneer effort in splenic surgery, did not remove the spleen, nor is there any evidence that he ever entertained such a proposition. The operation was undertaken for the relief of pain in an enlarged spleen of malarial origin. On opening the abdomen extensive adhesions were found and treated as the source of trouble. "I then proceeded," says the operator, "to break up all of the adhesions of the spleen, and endeavored to place this viscus as nearly as possible in what I conceived to be its natural position." The introduction of splenectomy into modern surgery dates from the memorable case of Péan, who in 1867 successfully removed from a young woman an enlarged and cystic spleen. Since then the operation has not only been accorded a place in legitimate surgery, but has been extensively practised with fair success, though the mortality-rate is still higher than in laparotomy for any other cause.

The indications for splenectomy have not been definitely settled. Taking as a basis the tables of Drs. Fussell,[2] Ledderhose,[3] and Zuccarelli,[4] and making the proper additions and corrections, we have the following summary, which fairly represents the conditions for which the operation has been made and the results attained up to date.

	Number.	Deaths.	Recoveries.	Percentage of mortality.
Hypertrophy, simple: malarial	48	28	20	58⅓
Leucæmia	27	26	1	
Pseudo-leucæmia	2	1	1	
Traumatism, no serious lesion of spleen	26	1	25	
Traumatism, rupture of spleen	6	5	1	
Floating spleen	25	1	24	
Cysts of spleen, simple: hydatid	6	1	5	
Abscess of spleen	4	3	1	
Sarcoma of spleen	3	1	2	
Syphilis of spleen	1	0	1	
Amyloid disease of spleen	1	1	0	
Healthy spleen	1	0	1	
Total	130	78	82	45⅓

Like all statistical tables promiscuously gleaned from current literature, this one must be taken *cum grano salis*, since it is always a fair presumption that fatal cases are less likely than successful ones to find their way into print.

The celebrated case of Franzolini (1881), which however has not gone unchallenged, still remains the only successful splenectomy for leucæmia. With the exception of Bardenheuer's case, which died from sepsis on the thirteenth day, none survived the operation longer than a few hours. Hemorrhage and shock were the cause of death in all but three cases.

There are a few writers (Fulsell, Adlemann, Asch) who, in view of the hopelessness of medical treatment, still look with favor upon surgical procedures, provided the operation is made when the gland is only moderately enlarged and before profound alterations have taken place in the blood. The consensus of opinion is, however, strongly opposed to this view.

The insidiousness of the onset of leucocythæmia and the extensive mutilation which splenectomy implies, taken in connection with the impossibility of eradicating the constitutional cachexia which is back of the splenic enlargement, will certainly tend to confine "early operation" within narrow limits. So far, the ghastly record leaves unimpeached the dictum of Bryant, "that the operation is physiologically unsafe and surgically unsound."

[1] Ohio Medical Counsellor, 1855.
[2] Universal Medical Magazine, September, 1890.
[3] Deutsche Chirurgie: Herausgegeben von Professor Billroth und Luecke, 1890.
[4] Splenectomies in Italy: American Medico-Surgical Bulletin, May, 1894.

The results in simple or non-leucæmic hypertrophy are more encouraging, although the mortality-rate is still high, about 58⅓ per cent.

Agnew (1889) holds that all cases of hypertrophy, simple, malarial, or leucæmic, are excluded from the realm of operative surgery. The latest text-book on surgery takes the more conservative position that, although hypertrophied spleens have been successfully removed these cases are for the most part not suitable for operation.

These statements are hardly sustained by the facts. It is undoubtedly true that simple hypertrophy will rarely in itself be a sufficient justification for the performance of splenectomy; but in the presence of pressure symptoms, twisted pedicle leading to degenerative changes or disabling pain, all of which may be caused by a moderate enlargement of the gland, the operation is not only justifiable, but offers a reasonable probability of a favorable issue.

It is very apparent that the results are better in the later than in the earlier operations, due, probably, to a more thorough asepsis and an improved technique, and lead to the hope of better things yet to come.

The record of the past decade in the operations for simple—including malarial—hypertrophy, shows twenty recoveries and eight deaths, a mortality of only 28¾ per cent. against 58⅓ per cent. calculated upon the total operations.

In discussing this phase of the subject it is proper to take into consideration the brilliant results of extirpation for floating or displaced spleens.

In over fifty per cent. of these histories it is specifically stated that the spleen was enlarged, while in very few it is designated as normal in size. In many of the cases, as in our own, the hypertrophy was extreme and gave rise to doubts as to their correct classification.

It is difficult to estimate from the imperfect data at hand the influence of malaria in causing the enlargement which led to the adoption of operative measures. It is only given as a cause of the hypertrophy in nineteen cases, of which five died and fourteen recovered. The condition of the blood, however, is a far more important factor in determining the issue in a given case than the amount or the nature of the hypertrophy (non-leucæmic). In any proposed excision of the spleen the blood should be subjected to a careful microscopical examination, and if the relations of the corpuscles are seriously disturbed, especially if the lymphatic glands are involved, operative procedures should not be undertaken.

Splenectomy for certain traumatisms of the spleen has a much better record than for disease. The results as displayed in the table, which includes both total and partial excisions, are very remarkable, and especially when the fact is recalled that almost all of the cases which enter into it antedate the dawn of aseptic surgery.

It is, however, worthy of more than passing mention, that in the recent literature of the subject there are recorded so few removals of the spleen for traumatic causes, and none for the peculiar traumatism with protrusion which gives the extraordinary results tabulated above. But unless interpreted in the light of the case histories, these figures would be manifestly misleading. The reports, so far as they are accessible, show that the above results were obtained when there was protrusion of the spleen through or into a parietal wound without serious injury to the gland itself or other viscera.

The graver injuries included under the head of traumatic rupture have necessarily a high mortality. It is fair to assume, from the deep-seated and protected location of the spleen, that when it has received an injury severe enough to suggest splenectomy the concomitant lesions would be profound and probably fatal.

So far as we are able to ascertain, the case of Riegner[1] (1892) is thus far the only successful extirpation for a subcutaneous trauma of the spleen.

The intense surgical interest of this unique case

[1] Berliner klinische Wochenschrift, February, 1893.

prompts us to give a brief résumé. A lad, aged fourteen, fell from the third story of a house and struck on his belly. Twelve hours after the accident, signs of internal hemorrhage supervening, the abdomen was opened in the middle line; the incision was subsequently enlarged by right and left cross-cuts. The spleen was found completely torn across at its middle, and the two sections widely separated. The spleen was removed, the abdominal cavity cleansed of large quantities of clotted blood, and the patient put to bed much exhausted. Convalescence was interrupted by gangrene of the foot and leg, which a few weeks later necessitated amputation through the left thigh. He recovered from both operations, and seven months later was in excellent health.

Ledderhose investigated the comparative merits of resection, extirpation, and reposition of the protruding spleen, with the following result: Ten resections with ten recoveries; eighteen extirpations with eighteen recoveries, and four repositions with one recovery.

The conclusion seems irresistible that in prolapse of the spleen through an abdominal wound, extirpation, either partial or total, is a safer procedure than simple replacement. However, this deduction is less startling when we reflect that there is far less danger from sepsis and hemorrhage in a laparotomy, with its careful toilet of the peritoneum and better control of bleeding, than in blindly replacing the protruding organ. These statistics, contrary to the traditions of the text-books, warrant the statement that removal of the spleen is not in itself a highly dangerous operation. An opinion which is fortified by the brilliant results in the removal of floating spleens, already noticed, as well as by the fortunate ending of the case of Trendelenburg, in which he removed a healthy spleen in dissecting out a retro-peritoneal sarcoma.

Hemorrhage and shock constitute the great dangers in splenectomy, about seventy per cent. of the deaths being attributed to these accidents. Sepsis is largely eliminated by the promptness with which the fatal issue follows the operation. According to Mosler, the hemorrhagic diathesis so constantly associated with splenic enlargements, both simple and leucæmic, is often latent and therefore unsuspected before operative measures are begun. The pedicle is the most common seat of fatal hemorrhage; not infrequently it comes from the torn adhesions, and in a few cases has been attributed to a capillary oozing from the congested viscera. For greater security, some operators advise the separate ligation of the vessels of the pedicle in addition to the ordinary encircling ligature, but Treves states that no advantage has been shown to attend this practice.

The shock is often profound and, as in the case herein reported, is not easily explained. Traction upon the pedicle in manipulating the tumor has often brought on dangerous collapse, due probably to pressure upon the splenic nerve-plexus. It is not improbable that many deaths credited to post-operative collapse are really the result of a slow intra-abdominal bleeding.

The present position of splenectomy may be briefly epitomized as follows: It is unjustifiable in leucocythæmia or other conditions in which there is extensive involvement of the lymphatic glands, or a notable increase in the white blood-corpuscles.

It is indicated in tumors, simple hypertrophies, and other splenic enlargements which have proven rebellious to simpler measures and are attended with danger or serious disability.

In movable or displaced spleens requiring interference extirpation is preferable to operative fixation.

Severe traumatisms of the spleen, with or without an external wound, or simple prolapse of the gland into a parietal wound, demand, as a rule, immediate extirpation. In cases of protrusion experience shows that excision, partial or total, is a safer procedure than mere replacement.

Removal of the spleen for cystic disease has an excellent record, but most authors advise a preliminary trial of incision with drainage. In abscess it is better, except in rare cases, to incise and drain than to attempt removal of the organ.

THE DANGERS OF GLYCERINE INJECTIONS INTO THE UTERUS, FOR THE PURPOSE OF INDUCING PREMATURE LABOR.

By OSCAR EMBDEN, M.D.,

BROOKLYN, N. Y.

T. Pfannenstiel publishes in the *Centralblatt für Gynæcologie*, No. 4, 1894, an article concerning the dangers connected with intra-uterine injections of glycerine for the purpose of inducing premature labor—a method of late frequently used in this country—and gives the history of two cases treated by him with the new method, in the Gynecological Clinic of Breslau.

As I have had the opportunity to observe one case with a very similar history, showing evidently the dangers of these injections, I take the liberty to give in the following an extract of the above article together with my case and some observations of my own. I consider myself the more justified in so doing, as Pfannenstiel's first case is not free from objections, leaving only one of his cases indisputable.

In the beginning of his article the author states that injections of different liquids into the uterus (for instance the injection of tar-water: Cohen's method) have been frequently recommended, but generally very soon rejected by the profession, on account of the dangers connected with these methods. Most of them, especially Cohen's mode of procedure, are said to have one great advantage; that is prompt and sure action even in cases where the ordinary methods have failed to act.

Following this idea, Pelzer recommended the injection of glycerine between the uterus and the fœtal sac, two years ago, publishing four cases treated by him successfully in this manner. Since that time we have read very favorable reports of the new method, written by different distinguished authors, none of whom mentions any dangers connected with this treatment.

Pfannenstiel tries to demonstrate these dangers with the following two cases:

Case I.—Primipara, twenty-two years of age, enters the Clinic on September 5, 1892, in the ninth month of her pregnancy, suffering from a very bad nephritis. Her legs and face were œdematous, she has no appetite, has headache and feels very weak. In the past seven days she suffered from dyspnœa. She is anæmic, badly nourished; has a hyposcoliosis, but no narrowness of the pelvis; cyanosis in a slight degree. Respiration, 44; temperature, 97.7° F.; pulse, 130 to 166, small. The urine contains eight per cent. albumin (Esbach's method), many casts and epithelial cells, no red blood-corpuscles, a few white ones; quantity 200 c.c in twenty four hours.

September 7th, 6 P.M.—Injection of 80 c.c. chemically pure glycerine between the uterus and the fœtal sac with every possible precaution. The patient stood the little operation very badly on account of orthopnœa. She had a slight collapse before the injection and a second one immediately after it, so that she required stimulants. Soon after the injection, it was evident that it had been performed too late. The breathing became more and more difficult, the pulse became weaker. Temperature, 95.9° F. She never had a single pain. She died September 8th, at 2 A.M.

The post-mortem examination showed that she had died of nephritis. Omitting the full report of this examination, I only mention that there was one tablespoonful of blood-colored urine in the bladder. The vesical membrane was of a red color. The fœtal sac was separated from the uterus over an area of about three inches square. No glycerine was noticeable at this point.

Case II.—This is a III. para with a narrow pelvis; artificial labor four weeks before term. Pfannenstiel first

tried, without success, Krause's method for some days: he pushed in three bougies between the uterus and the fœtal sac.

September 26th, 5 P.M.—Injection of 100 c.c. concentrated glycerine. The patient had immediately after the injection very strong and very painful contractions. These subsided after some time, the uterus remaining exceedingly sensitive. There was not any effect on the cervix. One hour after the injection the woman became drowsy and cyanotic, the temperature rose to 102.2° F., the pulse became slower, 68 per minute. On the previous days it ranged between 84 and 92. This condition continued for three hours. Then the temperature became normal, the pulse a little more frequent. After that the temperature remained normal. The urine, drawn off with the catheter, one hour after the injection, quantity 1 oz., was of a blood-red color. The woman was catheterized every two hours: the urine remaining as in the beginning until ten hours after the injection, when the color began to become lighter and twenty-four hours afterward it was normal. The urine contained large quantities of albumin until forty-eight hours after the injection; it contained nearly no morphotic elements, except some particles of hyaline casts, no red blood-corpuscles. The spectrum-analysis showed that there was methæmoglobin and hæmoglobin in the urine. The general feeling of the patient was not disturbed after the operation, but the appetite was poor for three days.

Premature labor was successfully brought on by means of the colpeurynter. The delivery of a living child took place September 28th, at 4.30 P.M. Puerperium without complications.

The case, observed by myself, is as follows: Primipara, aged twenty-four, in the ninth month of her pregnancy. She has had albumin in the urine for three weeks, the amount of which is rapidly increasing in the last few days, in spite of a very strict milk diet (seven per cent., Esbach's method). The quantity of the urine is about one quart in twenty-four hours. The sediment contains a few white blood-corpuscles, no red ones, a few renal epithelial cells, and a few hyaline casts. The patient has a headache, feels sick to her stomach, and very tired. She has slight œdema of the feet and hands. Under these circumstances it seemed best to induce premature labor as soon as possible.

March 19, 1893, 1 P.M.—Injection of 90 c.c. pure glycerine between the uterus and fœtal sac (Dr. Charles Jewett). This had to be done in chloroform narcosis, as the patient was very nervous. Soon after she recovered from the narcosis she had slight pains at longer or shorter intervals until 7 P.M. At that time the uterus was very sensitive, but there were no real contractions.

At 7.30 P.M. the patient had a very severe eclamptic convulsion of about three minutes' duration. As it was very desirable to terminate labor as soon as possible, and the cervix barely admitting the little finger, manual dilatation was very skilfully performed by Dr. Jewett, at 9 P.M., and a living child extracted with his own axio-traction forceps. The temperature was normal all the time, but the pulse-rate was very slow, ranging between 50 and 55 per minute; before the injection it was 78. The urine was not drawn off before delivery. The first urine after delivery—drawn with the catheter—was of a dark red color. It contained no red blood-corpuscles, but a large quantity of hæmoglobin. After twelve hours the water was only slightly colored, and twenty-four hours after delivery the color was normal. The albumin disappeared gradually. The next day after delivery a severe icterus set in, and the patient fell in a semi-comatose condition, which continued for six days. By this time the icterus and the coma had disappeared, and the patient recovered gradually.

In the first place, it is demonstrated by these three cases that the glycerine-injections do not act as quickly as we should expect. Pfannenstiel concedes himself that his first case is of little value in this respect, as it was too far advanced for any treatment; but his second one illustrates clearly that the injections of glycerine were of no more use than Krause's method (introduction of bougies). My case shows that there was, about seven hours after the injection, only a very slight dilatation of the cervix, although the patient had constant pains from the beginning.

Pfannenstiel is perfectly right in considering much more important than this the fact that Pelzer's method is liable to occasion indisputable symptoms of glycerine poisoning. This will be—as he says—a death blow to the method.

Concerning the first case, he does not, of course, consider the glycerine as the cause of the woman's death, but the nephritis. He deems it remarkable, nevertheless, that there was found a small quantity of blood-colored water in the bladder, the urine being entirely free from blood in the last days before the injection was performed, as shown by frequent examinations. Pfannenstiel tries to find the cause of this in the injected glycerine.

The second case was undoubtedly a case of glycerine poisoning, and although it did not damage the future health of the woman it kept her in danger for some time. The woman was in perfect health up to the time of the injection; the urine was normal. One hour afterward she had the symptoms above mentioned.

In my case there is a woman with nephritis, but there was not noticed at any time before the injection any trace of blood in the urine. After the delivery there was a good quantity of a dark red urine in the bladder. In examining the same, I failed to find any red blood corpuscles, but there was a large amount of hæmoglobin. Therefore the cause of this could not have been an acute congestion of the kidneys, as we at first thought—for there was no hæmaturia, but a hæmoglobinuria—and the only explanation we could find for this was a decomposition of the blood, brought on by the injected glycerine.

This does not seem so very strange, as we know—according to Pfannenstiel—that glycerine is liable to occasion a decomposition of the blood, as Luchsinger,[1] Schwan,[2] Filehne,[3] Lébédeff,[4] and Wiener[5] have demonstrated and Afanassiew[6] has shown, experimenting with dogs and rabbits, that the hæmoglobinuria, caused by glycerine, brings on a glomerulo-nephritis which is followed, after the injection of more glycerine, by interstitial nephritis as well as by interstitial hepatitis.

It is, of course, strange that neither Pelzer nor others met with a similar accident after injections of glycerine.

Pfannenstiel finds an explanation of this in the fact that Schwan, Lébédeff, and Filehne have shown that in rabbits, when the glycerine is brought under the skin, hæmoglobinuria always occurred, but that it did not occur, or in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this remarkable fact, Pfannenstiel deems it possible that, in Pelzer's cases, the glycerine was very rapidly absorbed by the circulatory system, while in his cases it acted in the decidua uteri as if it had been injected by the hypodermic method.

There is another thing about which I would like to say a few words, that is the icterus which, in my case, followed the hæmoglobinuria. On this account it seems to me especially interesting.

It is not very important whether this was, according to Kuehne's [7] theory, a real hæmatogenic icterus, that is, an icterus directly caused by the pigment of the decomposed red blood-corpuscles, or a so-called hæmo-hepatogenic icterus, which is said by Afanassiew, who denies the existence of a real hæmatogenic icterus, to be an indirect result of this decomposition only. This author thinks

[1] Pflueger's Archiv, 1875, p. 503.
[2] Eckhard, Beitrage zur Anatomie of Physiologie, 1879, vol. viii., p. 167.
[3] Virchow's Archiv, vol. cxvii., p. 413.
[4] Virchow's Archiv, 1883, vol. xci., p. 303.
[5] Archiv fuer Gynæcologie, 1884, vol. xxiii.
[6] Verhandlungen des Kongresses fuer innere Medicin, 1883, p. 216, ff.
[7] Virchow's Archiv, vol. 14.

that the pigment of the destroyed red blood corpuscles is deposited in the liver, where the gall pigment is normally formed out of the blood pigment, and the icterus occurs, in his opinion, on account of an overplus of gall-pigment in the liver, a part of which reflows into the blood.

Leaving this question undecided, one thing seems to be indisputable, and that is, the icterus was caused, in my case, either directly or indirectly by the decomposition of the blood poisoned by glycerine.

I would not dare to say that the semi-comatose condition of my patient, which disappeared with the icterus, was brought on by the same cause. It did not look like a uræmic coma, and we were unable to account for its origin. It might possibly have been one of the indirect effects of the decomposition of the blood, but it is better to leave this an open question.

Pfannenstiel also points out another danger of the injection of concentrated glycerine, and that is, according to the authors above cited, the possibility of a thrombosis, which concentrated glycerine, when brought into the circulatory system, may produce.

In addition to all these objections, there has still to be mentioned another danger connected with the new method as well as with the injection of any kind of fluid between the uterus and the fœtal sac, namely, the possibility of air entering into the circulatory system. This cannot be absolutely avoided, even with every possible precaution.

All this together seems sufficiently to show the great dangers connected with Pelzer's mode of procedure. It ought not to be used at all for the purpose of inducing premature labor, but especially not, in my opinion, in cases of nephritis, as we have seen that the glycerine is very liable, on account of its irritating effects on the kidneys, to make the existing nephritis worse.

If, in calling the attention of the profession to the dangers of Pelzer's method, I shall have convinced them that it is not a method for indiscriminate use, I will have attained my object.

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Clinical Department.

AN ECHINOCOCCUS CYST SIMULATING ASCITES.

By MARCELL HARTWIG, M.D.,

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D. R——, an Italian, appeared in my office February 1, 1894, saying that he had been sick about five months with loss of strength. Upon examination he presented all the symptoms of ascites, except that there was a very gradual change of the percussion dulness in changing position, and also that there was a remarkable bulging of the epigastrium. On February 5th I tapped him midway between the symphysis pubis and umbilicus. Over five quarts of an intensely green liquid were removed. A great many brown lumps and flakes came along, some with a gritty feel. The whole liquid appeared more viscid than ascitic fluid usually does. Microscopic examination showed rhombic dark brown crystals, which Dr. Benedict found to be bilirubin, fatty round-cells, and some large rings with double contour and two or three central dots which I could but consider eggs of some worm, but whether of ascaris or tænia I could not determine. The liquid was rich in bile. After the liquid was removed nothing unusual could be felt in the abdomen. The temperature was 100° F. in the rectum, pulse 79. Five weeks after the tapping the patient began to feel uncomfortable again, although he had gained some in weight. Jaundice had not existed previously, nor did such appear after the tapping. Fluctuation was distinct again and I was almost ready to push the trocar through the old place, when it became evident that the liquid was above that point, and that, in standing, the lowermost parts of the abdomen gave a tympanitic sound up to the middle point between the symphysis pubis and umbilicus. So, after an exploratory puncture with a hypodermic needle a finger's width above the navel, I pushed a good-sized trocar in and emptied what I now believed to be a sac. There were about two and one-half quarts of liquid with the former characters, only that the search for eggs proved futile. Through the cannula a Nélaton catheter, previously fitted, was introduced to the depth of a foot, and over it the cannula withdrawn in order to establish permanent drainage. Liquid of the same character kept oozing from the end of the catheter. While I was contemplating how to produce adhesive inflammation—thinking, for example, of injecting tincture of iodine, as in hydrocele, but fearing poisoning—natural infection came to my aid. The patient became feverish, the temperature often rising to 103° F.; the liquid began to turn into pus containing streptococci only. After a week's fever I thought the reaction plenty strong enough, and began injections of peroxide of hydrogen, which brought out some crystals for a while. The size of the cavity began diminishing. April 17th it admitted only 850 c.c. April 25th, 150 c.c.; May 3d, 100 c.c.—at a pressure of twelve to fourteen inches of water.

The patient was up and around again. May 17th liquid oozes immediately next to the catheter. I shall shorten the latter daily, as there is no doubt the process is at an end and the cavity gone. What else than an echinococcus cyst communicating with the gall-bladder or probably with a bile duct in the liver could this case represent? That the gall-bladder did not communicate with the cyst seems to me probable, from the fact that a probe introduced into the channel of the catheter, after the latter's withdrawal, seemed to reach decidedly too far underneath the lower surface of the liver, and that the stools were of natural color. This is the first case of echinococcus I have seen in fifteen years in Buffalo, although I have watched for it. The patient, liquid, and slides were presented in the Buffalo Academy of Medicine; and, during the discussion, a gentleman expressed his fear that such a method of drainage might expose the patient to leakage of fluid into the peritoneal cavity with resulting peritonitis. But the danger seems to me absent, even if the cyst should retract off from the abdominal wall, as long as it is emptied well so that there is no internal pressure left. In a few days a channel is formed of inter-intestinal adhesions, forming a perfect pipe, cutting off the general peritoneal cavity. Such a condition I saw years ago, when I placed a thorough drain from an abdominal incision through Douglas's pouch. Nothing would drain after a few days, until after about fourteen days an abscess in the neighborhood emptied itself into the channel, which was purposely kept patulous by the drain. The first few days the catheter, properly fitting the trocar cannula, will remain fluid-tight in the cyst as long as there is no internal pressure; afterward the adhesions suffice, if the cyst is ever so far retracted.

Reynier's[1] case of peritonitis after puncture of an echinococcus, where he warns, seems to me not good comparison, as, at least from the report, it seems that the cyst was not entirely emptied and the drainage not maintained. There is no doubt to my mind that the simplicity of this proceeding is far preferable to incision *à deux temps* (Volkmann) or to stitching the cyst to the abdominal wall and incising. The only difficult point is to determine where the probable root of the cyst is. This is important, in order to insert the trocar in its close neighborhood, so that the drain channel should not be too long. May be that even unilocular ovarian cysts could be thus cured. Impossible it does not seem to me even for multilocular cysts, although the present *modus operandi* is simpler for the latter. The future undoubtedly will show a great extension of this procedure.

Another argument supporting my view of the nature of

[1] Year-book of Treatment, Lea Brothers & Co., 1894.

this case is Weichselmann's observation that the connective tissue wall of echinococcus cysts contains bile-ducts which readily open into the cyst if the wall of the latter begins exfoliating. Thus it was frequently seen that echinococcus cysts began oozing bile after having been draining for some while. Here this occurrence happened only before the operation. The amounts of bile oozing were seen as high as one litre *pro die*, and it is no wonder that the whole contents of our cyst seemed to have been bile.

I have recently shown my patient a specimen of tapeworm, and asked whether his dog in Italy three years ago used to pass similar pieces; and he said the dog did, while he wondered about it. Usually there were only two or three pieces.

A CASE OF TRANSPOSITION OF THE VISCERA.

By HENRY J. HERRICK, A.M., M.D.,
CLEVELAND, O.

It occurs to me that the readers of the MEDICAL RECORD might be interested in hearing of a rather unique case, at present in Lakeside Hospital, Cleveland, in which the positions of the internal viscera seem rather mixed.

John S——, a German laborer, twenty-five years of age, entered the hospital about three weeks ago complaining of loss of appetite, weight, and strength. He had eight brothers and sisters, all of whom died while young, and he has always been delicate himself, and unable when a boy to knock around as his fellows did.

Upon examination, this unusual state of affairs was found: His heart is normal in size and correct in position, except that it is on the right side. The apex beat is in the fifth intercostal space, and one inch from the nipple, toward the median line; his liver is normal and in perfect position, except that it is on the left side; while his stomach seems to have changed places with the liver, and is on the right side. His spleen could not be made out.

355 ERIE STREET.

REPORT OF A CASE OF ACUTE SUPRA-GLOTTIC ŒDEMA WITHOUT APPARENT CAUSE

By JOHN H. PRYOR, M.D.,
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The term œdema of the glottis is often used improperly, and the grouping of all cases of œdema of the larynx under that head leads to confusion. Œdema of the glottis, or interior of the larynx, is of relatively rare occurrence, and in most of the reported cases the morbid condition is confined to the region above the vocal cords. This is particularly true of simple œdema, and for many reasons an anatomical distinction should be made. The term supra-glottic œdema seems to answer the requirements of accuracy and clearness.

J. S——, a dentist by profession, aged thirty, vigorous and healthy, consulted me on July 15th for difficulty in speaking and breathing. He had retired as usual the previous evening, and was awakened in the early morning by a slight sense of fulness and discomfort in the region of the throat. In the morning, thinking the trouble trifling, he went to his office and began his usual work. The local trouble became more urgent, and I saw him about three o'clock. At that time there were no objective signs of difficulty in breathing. The face wore an anxious look, but the feature which immediately attracted my attention was the peculiarity of the voice. The sound was new to me. It was metallic in quality and seemed to come from a cavern. I can think of no better definition than the word sepulchral. Enunciation was distinct, and there was no difficulty in understanding each word. The character of the voice differed distinctly from the muffled quality which is usually heard in secondary œdema, and was devoid of hoarseness; an examination revealed no evidence of acute pharyngitis or rhinitis, but marked œdema of the epiglottis and aryepiglottic folds. The epiglottis showed a line of division in the centre which gave the appearance of two large puff balls. It was erect and too firm to be aspirated into the glottis; at the base or lingual surface of the right side a large bleb of about one fourth inch in diameter was plainly seen. The aryepiglottic folds were greatly distended, and infringed directly upon the surface of the epiglottis. Any view into the larynx was impossible, owing to the extent of the tumefaction. The opening for the admission of air was almost entirely obliterated. Only the narrowest chink was visible when the patient uttered a vowel sound. There was pronounced infiltration of the connective tissue of the neck in the region of the larynx. Pressure on the larynx did not produce pain, and there was no complaint of pain or soreness in the throat or larynx; simply a suffocation feeling and no general symptoms whatever. Breathing eighteen to the minute, and temperature and pulse normal. I hurried the patient home, and at four o'clock the voice became husky and later whispering. The breathing grew more rapid and labored, and the face very pale. Applied six leeches in the region of the larynx. Ordered hot mustard footbath, wrapping in blankets and copious drafts of hot lemonade and whiskey. The sweating which followed was most profuse. When the leeches dropped off the swelling of the neck had disappeared. The neck was then packed in ice and the patient sent to bed. The day was unusually warm and the degree of humidity remarkably high, consequently steam was not employed. At six o'clock the breathing was much easier and the voice could again be heard. At eight o'clock the left vocal cord could be seen and the breathing was natural. I remained near the patient to scarify, if necessary. The local improvement was so marked at midnight that I considered it safe to leave him in the care of a nurse.

Upon inspection the following morning the œdema was confined almost entirely to one side, and the same afternoon both cords could be seen. They were pinkish in hue, but showed no traces of inflammation or œdema. Whether the œdema was confined to the epiglottis and aryepiglottic folds cannot be stated, but I believe that the loss of voice was due to transitory congestion of the cords.

On Monday, forty-eight hours after the attack, the patient was well and at work. I have examined him repeatedly since and never found any evidence of local disease. He has never shown any evidences of cardiac or renal disease, and I have been unable to discover any constitutional condition which might account for the strange attack. The usual causative factors were absent, and after searching the literature no clew as to the direct cause can be furnished. No similar case has been reported, to my knowledge. Some of the authors consider phlegmonous laryngitis and œdema of the glottis as practically the same affection. That there is a decided difference in the two conditions cannot admit of doubt, and this reported case of simple œdema emphasizes the fact. Cases of a somewhat similar nature have been recorded, which owed their origin to exposure, cold, untoward drug action, etc. —elements absent in my case. The possibility of it belonging to the angio-neurotic variety of œdema described by Quinéke and others, calls for comment. The cases reported by Quinéke, Dinkebarger, Strüburg, Osler, and others were essentially different in history and symptomatology. They were mostly characterized by recurrent attacks, skin eruptions, digestive disturbances, and a history of heredity. Careful inquiry and extended observation only prove the absence of all the accompanying features which make the so-called neurotic œdema diagnostic. This condition is at present obscure, and we are not in a position to decide what should or should not be included under this term.

The evanescent character of the attack might lead one to explain the anatomical changes by ascribing the condi-

tion to vasomotor disturbance, or temporary stoppage of the lymph-channels. The former seems most reasonable, although unaccountable, and the latter theory gains support by the knowledge of the distribution of the lymphatics which Hajek has supplied.

A more extended consideration of the possible causation might be interesting, but I prefer to present the case at this time as rare and most puzzling, and to state briefly the following points of clinical value: 1. The absence of any known causative agency and constitutional symptoms. 2. The extent of œdema, which may occur without marked dyspnœa. 3. The peculiar character of the voice. 4. The marked benefit of prompt treatment without scarification. 5. The possibility of the case belonging to a group of obscure clinical manifestations known as angio-neurotic œdema or allied vasomotor curiosities.

A CASE OF PNEUMONIA IN AN INFANT FIVE MONTHS OLD TREATED WITH INHALATIONS OF OXYGEN.

By RICHARD P. FRANCIS, M.D.,
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The following case seems worthy of record because of the immediate and very gratifying result that followed the use of oxygen when the patient was in an apparently hopeless condition. Oxygen has often been used in treating pneumonia in adults and children, but it is believed that its use with infants is not so common, and it is hoped that this account may be of service to anyone who may encounter a similar case.

The patient was a bottle-fed baby, five months old, well developed and nourished, and of healthy parentage; she had always been well up to the time of the present illness. On March 1, 1894, after having had a cough for two or three days, she was taken with a chill. Physical examination soon after showed a few fine râles in the right upper back, but no dulness and no bronchial breathing. Temperature, 102.8° F.; pulse, 180; respiration, 45. On March 3d, bronchial breathing developed and the respirations reached 100 per minute, while the pulse was 180 and the temperature 105° F. Ten drops of brandy were given every half hour, and a cough mixture of muriate of ammonia, fluid extract of licorice, and whiskey every two hours. The next day the circulation was very bad, the extremities became cold several times, and the face dusky. At 5 P.M. the child was put in a hot mustard bath and there were given twenty drops of brandy in which was dissolved a tablet triturate containing one minim each of tincture of digitalis and tincture of strophanthus, one-eighth of a minim of tincture of belladonna, and one two-hundredth of a grain of nitro glycerine. A good reaction soon followed. From this time on the "heart stimulant" tablets were given every three hours. Their effect on the heart's action was most marked; not so much in diminishing its rapidity as in increasing its force.

For the next five days the case ran a fairly typical course—the pulse averaging 160 and the respirations 120. It is interesting to note that on four occasions the respirations were more rapid than the pulse. On March 4th, at 12 M., respiration, 140; pulse, 130. March 5th, at 8 A.M., respiration, 120; pulse, 100. March 6th, at 4 P.M., respiration, 144; pulse 140. March 7th, at 4 P.M., respiration, 130; pulse, 120. The treatment was taken well, and two or three ounces of Pasteurized milk were given daily. Special care taken that the child had plenty of water, which she took eagerly and with evident gratification. Frequently brandy was administered in twenty-drop doses for four or five consecutive hours, to stimulate the flagging heart. On the morning of March 11th the record of the temperature, pulse, and respiration showed them to be the lowest since the beginning of the attack, and an examination of the chest gave evidence of beginning resolution. The next day the temperature was elevated, as were the pulse and respirations, and on the 13th bronchial breathing was found in the left upper back.

The pulse was weak and very rapid (180 to 200); the respirations averaged 140 per minute. During the morning brandy was given in doses of ten or twenty drops every half hour and the "heart stimulant" tablets every two hours. As it did not seem justifiable to push these remedies further, and as the infant's strength was already much reduced by the sickness of two weeks, it was thought that the safest aid could be obtained from oxygen. A cylinder was obtained about 5 P.M. and the administration at once begun by holding the mouthpiece pressed to the infant's nostril. At this time the condition was alarming in the extreme, as may be inferred from the fact that the respirations had been 140 all day, and the day before had at one time run up to 160; the pulse was varying between 160 and 180 (a little later it was 200), and the temperature was 103.5° to 104° F. The heart's action was weak, the skin dusky, and the whole condition was so evidently due to lack of proper oxygenation, that it seemed almost self-evident what remedy was needed. The only question was whether the remedy could be satisfactorily applied. But almost as soon as the stream of gas was allowed to enter the nostril the favorable effect was observed. The circulation and general condition improved as markedly as when the gas is given to patients who are able to co-operate in its administration; the duskiness of the skin disappeared, the respirations grew less shallow and slower, and the whole appearance changed for the better.

Throughout the day of the 14th, the oxygen was given every fifteen minutes for five seconds at a time, and during the subsequent night it was inhaled almost continuously; the brandy was given in ten-drop doses every half-hour, and the "heart stimulant" every two hours. Early the next morning the patient turned on the left side for the first time since the involvement of the left lung. The crisis of the disease was apparently reached, as from now on the symptoms gradually ameliorated; the stimulants were diminished by degrees and the food increased. The brandy and oxygen were given in alternate doses every half-hour for a day or two, and not for three days was the oxygen altogether omitted. The patient had a most satisfactory and complete convalescence, and is now a vigorous baby.

THE TYPHOID SPINE.

By JOSEPH N. STUDY, M.D.,
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There are certain sequelæ of typhoid fever which are known to physicians, but are rarely referred to in standard text-books upon the practice of medicine, and only occasionally spoken of in medical journals.

The title of this subject, so far as I am aware of, was first referred to by Dr. Gibney, of New York, who, at the American Orthopedic Association, in 1889, described a sequela of enteric fever, which he termed the typhoid spine, an inflammation of the periosteum and the fibrous structures by which the spinal column is held together.

The only other reference to such a condition that I know of is in an article published in the *American Journal of the Medical Sciences* for January of the current year, by Dr. William Osler, of Baltimore, who, under the title of "The Neurosis Following Enteric Fever, Known as the Typhoid Spine," reports the histories of four cases, and also three cases of Dr. Gibney. In brief, this condition is spoken of as following enteric fever, and has usually occurred after the patient had so far recovered as to be up and about. It is characterized by pain in the back, which, when any movement is made twisting or flexing the spinal column, is usually of an agonizing nature, often causing the patient to cry aloud. In some of the reported cases fever was observed, while in others it was absent. Usually there was no disturbance of motor or sensory nerves, and further than the

painful back there was no indication of disease in any other part of the body.

I desire to report a condition observed after typhoid fever, which, for want of a better name, I have called the typhoid spine. This case presented some features which are so infrequently seen that to me it was one of more than ordinary interest.

On August 10, 1893, Mr. W——, aged thirty-four, American, occupation undertaker, father of three children, and whose previous health had been excellent, was taken with typhoid fever. October 11th, he was discharged as being convalescent. His sickness was severe, and he had had hemorrhage from the bowels and diarrhœa. His recovery was uneventful until December 13th. At this time he had gained thirty pounds in weight, and had been doing some work, which consisted of a twisting or rotary movement of the spine, occasioned by standing on the rounds of a ladder and using a hand-saw. Following this appeared a painful affection of the back, extending from about the fifth dorsal to the third lumbar vertebra. For over three weeks the pain produced by any flexion or other movement of the spine was intense, and at times caused the man to cry aloud. Almost the entire time was spent in a reclining chair. In attempting to place the patient in bed the pain produced was so great that no persuasion could induce him to make further efforts. It was only because of the loss of sleep and the consequent free use of morphia, that the effort was made at this time.

There was an increase of temperature reaching as high as 103½° F., which continued for ten days, and was followed by rather free perspiration. There was at no time any hyperæsthesia or other indication of either the motor or sensory nerves being affected. No complaint was made of pain in any other portion of the body. At one time a band-like feeling around the waist was complained of for a short time. No tenderness was observed when pressure was made over the seat of pain. Repeated examinations of the various organs of the body and of the urine were made, but were always negative in their results.

After ten weeks the patient has so far recovered as to be out, and says he is almost entirely free from pain.

SOME MINOR POINTS TO BE OBSERVED IN ADMINISTERING CHLOROFORM.

By AARON JEFFERY, M.D.,

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Ever since chloroform and ether have been in general use, the question of which is the safest and best anæsthetic has been debated throughout the country. Recently there appeared in the Medical Record several articles in support of chloroform, among the number an article by Dr. Fisher, of California, headed—"Chloroform in Organic Disease of the Heart." He lays great stress on the slow administration of the drug; and in my opinion that is one of the most, if not *the* most, important point to be observed in its administration.

By observing this rule, the lungs and heart gradually become acclimated, so to speak, and the shock to the nerve-centre is avoided. If a person could be suddenly removed from a low to a very high altitude, I dare say the same thing would happen that often happens during the *quick* administration of chloroform, namely, cessation of the respiration, and as a consequence, engorgement of the heart and death. On the other hand, if the change be gradually made, the person often can stand the change well, and, for the same reasons, the slow administration of chloroform may be tolerated when the quick method would cause death. In the German schools of medicine, I believe they all practise the slow method, and chloroform is the anæsthetic used mostly by them.

There are other minor points that should be observed. The patient's head should be turned so as to allow the tongue to fall to one side. About ten years ago, on one occasion, I came very near losing a patient on account of neglecting to observe this rule. The patient's breathing stopped and the pulse became rapid and weak. I discovered that this alarming condition was caused by the relaxed tongue having fallen to the back of the throat, and thereby shutting off all air from the lungs. The tongue was pulled out by means of a tenaculum, artificial respiration performed, and in a short time the man wa breathing quietly. As a general rule, I think it advisabls to administer an hypodermatic injection of morphine about fifteen minutes before commencing the anæsthetice The nervousness of the patient is thereby lessened, and. the quantity of chloroform necessary to keep the patient anæsthetized is also lessened, to say nothing of the stimulating effect of the morphine on the heart's action.

One should always have at hand an hypodermatic syringe loaded with whiskey or brandy, a phial of aqua ammoniæ, and some nitrite of amyl, to use in case the heart or respiration should fail.

Nothing original is claimed in this article, but I believe if these details are observed strictly, namely, the slow administration of the drug, the previous administration of morphine hypodermatically, the patient's head kept on one side, ammonia, whiskey, and nitrite of amyl at hand, that the deaths from chloroform inhalations will be greatly diminished.

THE EXCESSIVE CONSUMPTION OF TEA AS A CAUSE OF MULTIPLE NEURITIS. REPORT OF CASE.[1]

By WILLIAM PHILIP SPRATLING, M.D.,

NEW YORK.

The etiology of multiple neuritis is quite extensive and varied. In different countries the affection is described under different names. In India, portions of South America, and the East and West Indies, it is known as beriberi. In Japan, where it frequently occurs in epidemics of great severity, it is called kakké.

The causes of multiple neuritis differ in these widely diverse communities. In Japan, the matter of diet has long been held to be an etiological factor of importance. The inhabitants of that country, as we know, subsist almost wholly on a diet of fish and rice, and drink tea to the exclusion of all other beverages. Among sailors on shipboard also, where the disease is frequently found, restricted diet has been regarded as a potent cause.

The causes of the disease, as we find it in this country, are most varied. Among those most usually recognized and active, may be mentioned alcohol, illuminating gas, lead, arsenic, strychnia, and the infectious agents of certain diseases, as typhus, diphtheria, small-pox, malaria, and tuberculosis. Exposure to cold and damp, and overexertion, are likewise causes.

Gowers is of the opinion that "endemic neuritis, as it occurs in Japan, is due to some endemic influence." It is a matter of common knowledge that the Japanese people are the greatest tea-drinking race in the world. It is likewise true that the people of no other country suffer so frequently and so violently from multiple neuritis as the Japanese do. Not only is the disease present with them at all times in an endemic form; but it frequently sweeps over the country in the form of severe epidemics.

Is there any connection between excessive tea drinking and multiple neuritis? I think there is; and for this reason. Tea is a recognized stimulant of the nervous system. Its prolonged and excessive use induces a train of well-marked nervous symptoms, which vary in individuals of unlike susceptibilities. A brief reference to the physiological action of tea, or its alkaloid theine, will show this to be true.

Richardson[2] says, "This alkaloid exercises a special influence on the nervous system, which, when carried to

[1] Read before the Harlem Medical Asssociation, May 2, 1894.
[2] Preventive Medicine, 1884, page 364.

a considerable extent, is temporarily, if not permanently, injured." This author observed the most characteristic effects of tea in "tea tasters," persons who by profession are engaged to determine the qualities of tea by the process of tasting different specimens of strong teas. He found in such persons distaste for food, deficient appetite, nausea, nervous depression with muscular tremors and feebleness, constipation, flatulency, and almost entire inability to sleep.

Wood [1] says: "Chemically, the alkaloid obtained from tea and known as theine is identical with caffeine; indeed," he adds, "most of the caffeine used in commerce, according to Dr. Charles Rice, is obtained from the tea leaf. If, however," he further adds, "the experiments of Dr. Thomas J. Mays are confirmed, theine is not physiologically identical with caffeine." Dr. Mays asserts, as the result of his experiments made on frogs, that theine differs from caffeine as follows: 1. Theine produces spontaneous spasms and convulsions, while caffeine does not. 2. Theine impairs the nasal reflex early in the poisoning process, while caffeine does not, if at all, until the very last stage. Dr. Mays also claims that theine is a powerful local anæsthetic.

Thus we see that all the phenomena observed by Dr. Mays that were induced by theine, including spasms, convulsions, abolition of nasal reflex, and anæsthesia, were purely of nervous origin.

The case I have to report is that of W. S. W——, male, thirty years of age. Usually strong and robust, but suffers at long intervals from very mild attacks of subacute articular rheumatism. Does not use liquor or tobacco in any form. Is extremely susceptible to the influence of alcohol, one-half ounce of any light wine quickly causing flushed face and noticeable exhilaration.

Prior to November, 1892, he had not been a tea-drinker. At that time the habit was formed of taking one-half pint of strong tea at noon, and again about four o'clock in the afternoon. Later the quantity consumed was increased to one and one half pint daily, and the increase became gradual until from two and one half to three pints were taken in twenty-four hours. Six weeks after this indulgence began, a mild tingling sensation appeared in the right hand, extending half-way up the forearm. Small blebs, due to trophic disturbances, appeared on the dorsal surface of the first and second fingers. The skin of the entire hand was slightly hyperæsthetic, and the temperature sense of the member was impaired. At the same time it was noted that the heart's action was feeble and irregular.

An exact diagnosis of the condition at that time was not made. The use of tea was stopped, small doses of digitalis given, the patient directed to take long walks daily, to eat simple, nutritious food, and in six weeks all traces of the trouble had disappeared.

The second attack occurred in January, 1894, fourteen months after the first. For three weeks preceding this attack, strong tea was again used in excessive quantities. The patient was engaged in literary work and took the tea as a stimulating and refreshing drink. The first symptom noted this time was pain in the right wrist, dull, boring, and burning in character. It was ascribed to rheumatism, until pain of the same character was felt in the right shoulder, spreading over the scapula as far as the spine, and running down through the axilla, along the course of the median nerve, as far as the elbow. The brachial plexus was involved, and pressure applied to any part of the axillary space caused intense pain. The chafing of the seam of the undershirt in the armpit caused great discomfort. The median nerve was especially involved. Pressure over it at any point could not be borne. Both of the main nerve-trunks below the elbow suffered. The first disturbance of the temperature sense of the hand was noted when the hand was put in water at a temperature of 50° F. Pain was so great that it had to be withdrawn. The surface of the hand, especially the dorsal portion, became painful to the touch.

[1] Therapeutics, its Principles and Practice, 1892, page 373.

The sensation was described as being similar to that felt when the skin is blistered and again brought into contact with heat. A group of three small trophic blebs appeared over the carpo-metacarpal articulation of the first finger. A similar group, but more numerous, developed just below the styloid process of the ulnar. Between the first and second joints of the phalanges of all the fingers, small, hard, deep-seated nodules appeared. Pressure over these caused intense pain. Picking up or handling hard, firm substances, as a chair or a book, was accomplished with difficulty. There was delayed transmission of pain and temperature sensation. Remak's sign was noticeably present. This was well exemplified by making pressure over the nodules on the fingers above described, or by pinching or pricking any part of the hand, when pain would not be felt for two seconds or more; and when it did appear, grew in intensity, and after reaching its height, would slowly subside.

The motor symptoms were not so marked as the sensory ones, due to the fact that the disease did not progress beyond the inflammatory stage. There was, however, weakness, and quick sense of lack of power when the hand and arm were used. Writing was difficult and could only be done for a limited period of time without rest.

I regret that I was unable to test the electrical reactions of the case. For diagnostic purposes, however, it was not needed.

The treatment consisted of the application of the usual remedies. Good general tonics, and drugs that build up the economy, are frequently indicated. The removal of the cause, whenever found, is, of course, superior to all other forms of treatment combined. In this case, the use of tea was absolutely forbidden; out-of-door exercise in abundance prescribed, the use of light, nutritious food advised, and in six weeks the disease had entirely disappeared.

70 West Eighty-eighth Street, May 1, 1894.

THE TREATMENT OF QUINSY.

By SILAS S. CARTWRIGHT, M.D.,

roxbury, n. y.

Some years since I saw the following prescription in the Medical Record for quinsy:

℞. Norwood's tincture ver. vir..... gtt. xxx.
Morphiæ sulphas..... gr. jss.
Aquæ..... ʒ vj.

M.—Sig. Dose for an adult one drachm, to be repeated according to judgment in one hour, then every two or three hours according to the effect of the morphine.

I have used this prescription several times; in three cases out of four it has aborted the disease; where suppuration has supervened the disease has been more under control. I would give the physician's name and residence but have forgotten it.

The only other treatment has been mild gargles and a cathartic of epsom salts. I have tried other methods of treatment, but this has been the only satisfactory one.

Experiences with New Anæsthetics.—At the meet- of the Académie de Médicine last week, M. Duplay read a report on a case of death by bromide of ethyl in the course of an operation. Hitherto it had been thought that this agent was innocuous, but some recent accidents (two deaths) should render surgeons more circumspect and more prudent in its mode of administration and cause them to take some of the precautions regarded as indispensable when chloroform is the anæsthetic. M. Laborde drew the attention of his colleagues to a new anæsthetic mixture consisting of nine parts of chloroform and one part of ether. It would seem that this combination acts more promptly and with less danger than when either of these agents is employed separately. Further, the active properties of chloroform are attenuated.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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IS THERE A NEED FOR MORE MEDICAL COLLEGES?

IT is so seldom that we have outspoken views in matters pertaining to the general welfare of the profession, in different localities, that it is worth while to make note of them when they are offered, and give them that weight which an honest conviction of the principles upon which they are founded makes manifest. Although such independence of thought is oftentimes associated with unpopularity in affected quarters, it has its wide range of usefulness in the far-reaching indorsement of the majority beyond. It does not matter, for the sake of the principle involved, whether or not a new medical college is to be started in Alabama, or any other State, but the question narrows itself to the necessity of any more medical institutions of the kind anywhere. The discussion on the true point of issue, in the particular case before us, centres upon the possibility of quieting an objector by giving him a place in a faculty.

The failure to do so, however, was emphasized by a circular letter from him, which treats the question in such a general and fair way, that we quote extracts for the benefit of all concerned. The reasons given have an application far outside the limits of the particular State.

Dr. Jerome Cochran, of Montgomery, Ala., is the writer of the letter referred to. He states that the said letter was originally addressed to the *Age-Herald*, but "for reasons satisfactory to all concerned, it was not published in that paper." This will not hinder, however, other than the readers of that journal from a knowledge of his sensible view of the situation.

"It was only yesterday that I saw in the *Age-Herald* of June 10th a list of the professors and lecturers in the proposed new medical college in Birmingham. In the list of lecturers I am surprised to find my own name. What authority you had for publishing me to the world in that capacity I do not know; but it was certainly done without my knowledge and without my consent. Not only so; but it places me in a position of considerable embarrassment; because it must have left the impression in the minds of those who read the statement that I was in favor of the organization of this new medical college. But I am not in favor of it. On the contrary, I regard the establishment of a new medical college in Alabama as in contravention of the best interests of the profession and the people, and if my name has any influence, I should regret very much to have it used for the furtherance of any such enterprise. I do not desire to be misunderstood. I do not object to the establishment of a medical college in Birmingham any more than I would object to the establishment of such an institution in Montgomery, or in Selma. But we have already in this country three times, yes, six times as many medical colleges as we have any need for. In this opinion I am sure that I will be sustained by nine-tenths of the doctors in Alabama—in the South—in the whole of the United States. This being so, the further multiplication of medical colleges is not a consummation devoutly to be wished; and a new medical college in Alabama can by no possibility be of any benefit to anybody except the gentlemen personally connected with it. It does not fill a long-felt want. It does not respond to any demand of public utility or convenience.

"Not only have we more medical colleges than we need, but we also have more doctors than we need. Not one-half of the doctors in Alabama are now able to make decent livings by the practice of medicine. Nevertheless, the exploitation of a medical college is a business in which honorable men may honorably engage. Only let it be well understood that it will not contribute to the welfare of the people or to the aggrandizement of the medical profession."

He further says: "In all this I am not taking any new position. For many years it has been well known in Alabama that I have regarded the medical colleges as in a large measure the natural enemies of our people and of our doctors. In this connection I beg to refer to the two addresses delivered by me before the Medical Association of the State, one in 1870 and the other in 1871, and which were printed in the Transactions for the years mentioned. In one of these I describe the creation of a medical college in these words: 'The process was simple enough. It was only necessary to form a company of seven or eight doctors, build a big brick house, and apply to a complaisant legislature for a charter, and lo! the thing was done. Full-fledged professors grew up in a night like Jonah's gourd; diplomas in high-sounding Latin and on excellent sheepskin could be ordered by the thousand, and the only thing left to do was to get students. But students they must have or perish.'

"We do not have to seek far to discover the cause of antagonism between the medical colleges and the medical profession. It is due to the fact that the great majority of our medical colleges have been built by private enterprise, and have been managed for the private emolument, in money and in reputation, of the men who built them. All this is as in the nature of things we should expect it to be. But let us call things by their right names."

By way of further vindicating his position he very forcibly remarks: "The most interesting chapters in the history of the American medical profession are those that describe the emancipation of the profession from the tyranny of the medical colleges—a struggle that has been going on for the last fifty years, and which is not yet completely won. In Alabama we have for the protection of the people and of the profession against the usurpation of the colleges the medical law of 1877—a sufficient protection as long as it is left us. But if we had had as many medical colleges in Alabama as they have in Tennessee and Georgia, we would have been left, as are the

people of those great States, to the tender mercies of our enemies, the faculties of the medical colleges."

Well and truthfully said, Dr. Cochran; you will evidently have the majority with you, not only in Alabama, but throughout the country.

THE DIGESTION OF MILK.

The importance and value of milk as a diet is acknowledged by all, and needs no exposition here. Milk is not only a very nearly perfect food, but it is diuretic, and its lactic acid has been found to have germicidal properties on the *bacillus communis coli* (Gilbert and Dominici). But despite all that can be said for milk, there are many persons who dislike it, and positively assert that it does not agree with them. The common belief is that it coats the tongue, produces a bad taste in the mouth, and leads to fermentation, constipation, and "biliousness." The physician often has a hard time with these galactophobics. Sometimes he persuades them to try the milk, and the patient is surprised to find that he is not as much disturbed as was expected. But more often the patient returns with the "no better" or "I told you so" expression on his face, and reiterates the tale of his digestive limitations. Then, perhaps, the doctor sets to work to tinker the liquid into more assimilable shape. It is boiled, sterilized, or pasteurized; or it is diluted with water or vichy, or sweetened with malt, or salted a little to taste, or peptonized to non-appetizing bitterness. Matzoon, koumyss, or buttermilk are then perhaps substituted. Not infrequently a moderate degree of success is achieved, but there is always a percentage of failures. We welcome, therefore, any substitute for milk or means of making it more acceptable.

M. Bovet, of Pougues, asserts (*Bullet. Général de la Therapeutique*) that he has succeeded in making milk digestible by adding to it *légumine*. This substance is a vegetable ferment, which, he says, acts upon the casein, turning it into a soluble albuminoid—a sort of lactated peptone. The legumine is also given independently as a food in doses of fifty grammes or more a day. He reports a number of cases in which patients were able to take this combination of milk and legumine when all other foods were rejected.

THE NEMESIS OF "DOC."

A writer in *The National Medical Review* says some words regarding the significance of the title "Doc" which are apt and eloquent, and which, we venture to surmise, come from a heart that has been embittered by some sad personal experiences. "If," says this writer, "it has been your misfortune to be called 'doc,' and if this recognition has become at all general among your friends, you might as well move to some other place. A man may be called a thief, a liar, and a dead-beat, and yet he may prosper and live upon the fat of the land. But once let him be called 'doc,' and his professional success is at an end. We would prefer to spend a night in the station-house, so far as its effects on our professional success is concerned, rather than to have our friends notice our approach by saying, 'There comes doc.' If a man calls you 'doc,' you need never expect a penny from him for any professional services you could render. His answer is sure to be, 'All right, doc, in a few days that will be all right.' 'Doc' means disaster. 'Doc' is the culmination of all calamity. 'Doc' is a catastrophe given at one stroke. 'Doc' is the warning that we have reached the extreme limit of our usefulness. 'Doc' is the hand which points us to the next town. Shun it, my young friend, as you would flee from a Kansas cyclone or a prairie fire. Knock the man down who first dares speak it to you, and call upon the whole medical profession for vindication of your righteous deed."

There are some people, alas, to whom all doctors are just "docs." No amount of dignity in appearance, sobriety in demeanor, superiority in years, wisdom, experience, wealth, position, or morals makes the slightest difference. The doctor is clapped on the shoulder and affably saluted with the damning monosyllable. Hippocrates returned to earth bearing the dignity of supreme genius and wisdom would be simply welcomed back with the same "Here comes doc."

But, after all, "doc" is the Nemesis which pursues the medical profession for clinging to the mediæval practice of affixing always the title "doctor" to the physician's name. Of all men of learning, the doctor alone thrusts his profession into every phase and association of his life. He is always Dr. Brown, M.D. No wonder, therefore, the title has grown so familiar that it signifies little to the educated, and fails to protect against the familiarities of the ill-bred.

MANAGING BOARDS AND TRAVELLING HEALERS.

There is a hospital at Echuca, Victoria, N. S. W. It is very far away, but hospital managers are just the same on both sides of the world. This hospital needed funds, and an entertainment was organized for that purpose. Among the chief attractions was to be "Professor Tarasco, the marvellous travelling healer," who was to cure people for various modest sums, all of which would go to the hospital. The medical board entered a protest against securing the services of such a person for such a purpose; but their protest was almost unanimously unheeded, and the medical board was asked to withdraw its letter. Some of the medical men thereupon resigned.

The affront would certainly justify such action.

The Cutaneous Application of Certain Alkaloids as Regulators of Thermogenesis. — MM. Guinard and Geley have found that of eighteen alkaloids applied in solution or as an ointment to the inside of the thigh of man or of one of the lower animals, four of them, viz., cocaine, solanine, sparteine, and helleborine, have constantly the effect of regulating heat production. This regulating effect is entirely due to the action of the drug on the peripheral nerves, and is entirely independent of absorption through the skin. That this is so is proved by the absence of any such effect by the introduction of the same drug into the system. No trace of the alkaloid was, moreover, discovered in the urine in the above experiments. Again, drugs commonly administered as antipyretics—quinine, antipyrin, phenacetin, sodium salicylate, aconitine, etc.—are ineffectual when rubbed into the skin. The experiments do not show any superiority of the alkaloids over guaiacol.

News of the Week.

The Plague in China. — Surgeon-General Wyman, of the Marine Hospital Service, has received a report regarding the "plague" in China from Dr. Stuart Eldridge, a member of the Imperial Board of Health of Tokio, and Health Officer of the Port of Yokohama. The report is in the nature of a warning. The plague, he says, has been known to be present in the Yun-Nan district of Southern China for at least fifteen years, in form generally sporadic, at times epidemic in malignant form. The disease broke out in February, in Canton, and almost simultaneously was epidemic in Bakhoi, a port at the head of the Gulf of Tonquin not often visited by European trade. The epidemic in Canton steadily increased in March and April, until in the latter month it had assumed gigantic proportions.

The authorities of Hong-Kong, the centre of trade in the far East, half a day's journey from Canton, and in constant communication therewith, utterly ignored the existence of danger until, in the first ten days of May, the plague broke out violently and extensively in Hong-Kong.

Since its appearance in Hong-Kong the epidemic, which is unquestionably a genuine bubonic plague of a most malignant type, has steadily increased until, by the latest reliable advices, the mortality is certainly over one hundred a day; and this despite the fact that at least one hundred thousand Chinese and many Europeans have evacuated the place—the former, in many cases, leaving on feeling the first symptoms of the disease, in the hope of dying in their native villages. At least a dozen Europeans have been attacked, most of them succumbing. Since Dr. Eldridge's report, which was written about a month ago, there has been no marked progress of the plague. If it should reach Japan this country would be in some danger. Still it is a disease that could be easily controlled.

Cabbage and Ice-cream do not go well together in the human subject. This physiological fact was tragically demonstrated by Lena Carey, of Delaware, who on a wager ate a large quantity of cabbage and followed it with four plates of ice-cream. Next day she died.

The Riverside Hospital at Yonkers has received an additional gift of $50,000 from Mr. and Mrs. M. F. Cochran.

Mr. George Meredith, the greatest of England's living novelists, has dedicated his latest work to a physician. In this he follows the example of one of the greatest of England's earlier novelists, Mr. Thackeray.

The State Constitution and the Coroner System.—The obstacle in the way of abolishing the ridiculous and antiquated coroner system of this State by legislation, has thus far been the bare recognition of the office of coroner in the Constitution. "Coroners" are included among the officers who must be chosen by the "electors of their respective counties," and who may be removed by the governor, and they are mentioned a second time among the county officers who were to hold office until the expiration of the terms to which they were elected on the going into effect of the Constitution of 1846. With these exceptions, the office is in no way referred to in the present Constitution, and it is only necessary to expunge the name from two sections referring to county offices to enable the Legislature to reform the whole system of inquiring into the causes of sudden death. There is no doubt that the gentlemen appointed by the Academy of Medicine to co-operate with the Constitutional Convention will see that the proper change is made.

The Columns of *The Lancet* sprout weekly with asparagus items. We had thought that the matter was settled, and that asparagus was to be definitely classed as a diuretic, and to an extent perfumer of the genito-urinary tract. But Dr. Samuel Wilks comes out in an open letter and states that the contrary is true. Asparagus is, he says, in effect anuretic, lessening the urinary flow. When matters of this kind fail to be settled by the languid and ineffectual observations of the Old World, it becomes necessary to call in the aid of the New. Through the columns of the MEDICAL RECORD it was established that the sick do sneeze, and we are sure that our readers can settle with equal positiveness the important question: Is asparagus a diuretic?

The Modern Tendency in Public School management is to abolish devotional exercises, and substitute gymnastics and sanitation. This tendency has reached its extreme in Vienna, where Dr. Kohn has proposed, in order to prevent the propagation of diphtheria among school-children, to have them inhale permanganate of potassium, in the form of a spray, before leaving the classes.

The Cholera prevails extensively on the continent of Europe, cases being reported from Lubeck, Nantes, Berlin, and many places in Russia. In St. Petersburg the epidemic is rapidly spreading, the new cases averaging 200 daily and the deaths 100. There are over 1,000 patients in the hospitals of the city. The disease has also broken out in the military camp at Krasnoe Selo, eighteen miles south of St. Petersburg.

Mr. Gladstone's Eye requires another operation, and he has returned to London to have it performed.

An International Congress for the Protection of Infant Life was held at Bordeaux on July 22, 1895. It consisted of three sections: 1. A physical section, in which all questions relating to societies for protecting infant life, maternal charity *crèches*, children's hospitals, sanatoria, etc., were discussed. 2. A moral section, for the discussion of questions relating to the protection of children abandoned by their natural protectors, apprenticing, orphan homes, and agricultural colonies. 3. An administrative section, in which the Roussel law and all questions relating to the protection of infant life will be studied.

Shorthand in Medicine.—In order to promote the use of shorthand by medical students and practitioners, by enabling them to increase their knowledge at the same time of the art and of their profession, a small sheet of clinical teaching in lithographed phonetic shorthand has been issued by a London firm. The paper, which will be continued if found to fill a need, contains reports of clinical lectures by Dr. Gowers and other prominent London clinicians.

Joseph Hyrtl, the distinguished anatomist, died at Vienna, on July 17th, aged eighty-three. He was Professor of Anatomy in the University of Prague from 1837 to 1845, when he was elected to a similar chair in the

University of Vienna. He was the author of a "Manual of Physiological and Practical Anatomy," and a "Manual of Topographical Anatomy and its Applications."

A Collective Investigation of Quacks has been proposed by Ernest Hart. He asks medical men to send to him the following information: the name and address of the quack, the description of his premises, one of his advertisements, including a copy of each book and pamphlet, and cuttings from the local papers with dates; a memorandum must also be made of the date on which the name, address, and description of the premises is taken down. The member must do this himself, and preserve his original notes. The results of the observations should then be catalogued and arranged by the different branches. It would also be necessary to note the nature and condition of the neighborhood where the quack purports to practise, and his hours of attendance. If this work is carried on all through the United Kingdom, we should then be in a position to call the attention of Parliament to the prevalence of quackery. I admit that the task is a heavy one, but unless some such plan is carried out it will be impossible to expect such drastic reform in the Medical Acts as is desirable in the public interest as well as in the interest of the profession. This class of quacks will scarcely be affected by the hitherto proposed amendments to the Medical Acts.

The American Journal of Insanity.—In a circular dated July 12th, the retiring editor, Dr. G. Alder Blumer announces that the *American Journal of Insanity* has been sold to the American Medico-psychological Association, and will be edited by a committee consisting of Dr. Edward Cowles, of Boston; Dr. Henry M. Hurd, of Baltimore; and Dr. Richard Dewey (in immediate editorial charge), of Chicago; and that until further notice it will be published in Chicago.

The Income Tax and Professional Workers.—It is gratifying to notice that on several occasions during the discussion on the Budget proposals influential speakers have directed attention to the injustice of applying the same rate of taxation to income derived from hard work, and dependent on the life and health of the payer, as is applied to income derived from investments. True, no statesman has yet had the courage or the energy to devise means for remedying this injustice; but it is now so clearly perceived and expressed that its redress cannot be much longer delayed.—*Lancet.*

The Negro as a Hospital Interne.—In the last examinations for position as interne at the Indianapolis City Hospital, a negro was appointed as the best fitted among a considerable number of candidates. The young man is of Massachusetts birth and is twenty one years old. He is a graduate in arts of the State University of Missouri, and received the degree of M.D. from the Medical College of Indiana in this year's class, ranking third in a class of fifty-four, all the others being white. This appointment of a negro, though fairly won, has caused a most bitter outpouring of abuse upon the young man and all concerned in his appointment. His services began in the surgical wards, whereupon the pay patients left and the charity patients made bitter complaint at what they considered an indignity. The general character of the vituperation can be judged by the following extracts from a letter to one of the local medical papers. After bewailing the fact that during this young man's service—which the writer will only speak of as "these circumstances"—no pay patients will enter the hospital, and thereby the city will lose some two to five hundred dollars a month, the letter continues: "The worst feature of this unfortunate situation is that in four months, by rotation, this young man will be placed in charge of the obstetrical department, and white women, whose only crime is poverty, must submit to the unspeakable outrage of bringing innocent children into the world under the touch and manipulation of this son of Ham." He then asks "the Board of Health, who made this appointment, the cringing politicians who prevent the righting of the wrong, and, lastly, all persons who favor this phase of negro equality: How would *you* like to look back to the day of your birth and know that a negro doctor helped to usher *you* into the world?" In conclusion he says: "If the Indianapolis city government does not place this young man where he will only administer to those of his own race, as is fit and proper, they will rob the city treasury, degrade and humiliate many persons, benefit no one, and deserve everlasting contempt from every citizen, both white and black."

The Indian Medical Congress.—The first Congress of Indian medical men will be held in Calcutta, on December 24 to 29, 1894. It is proposed that the work of the Congress should be divided into sections as follows: Medicine and Pathology; Surgery, including Ophthalmology; Obstetrics, and Diseases of Women and Children; Public Health; Medico legal Medicine and Insanity; Pharmacology, specially Indigenous Drugs. Although the Congress is primarily an Indian one, an invitation to assist at its deliberations is extended by the Executive Committee to medical men in this and other countries, some of whom have already accepted. Apart from the medical work of the Congress, which promises to be interesting and instructive, there will be the opportunity of seeing India and visiting its chief cities. The climate during the winter is perfect, the facilities of travel excellent, and two or three months, inclusive of the double voyage, would suffice not only for the work of the Congress but for a visit to most of the chief centres of interest. The journey from London to Calcutta occupies about eighteen days, *via* Brindisi and Bombay, about a week longer *via* Gibraltar and Malta. The P. and O. S. N. Co. have weekly steamers by both routes, the British India Company fortnightly *via* Gibraltar. The Messageries Maritimes run from Marseilles, the Rubattino from Genoa, and the Austrian Lloyds from Trieste. The Calcutta season is at its height during Christmas week, and the committee expect to be able to present a varied programme of entertainments, while a special committee has been formed to attend to the convenience and comfort of visitors. Any desired information may be obtained from the secretaries, Dr. W. J. Simpson and D. M. Moir, 5 and 6 Government Place, Calcutta.

The Medical Golden Rule.—"I feel constrained for once to give you a golden rule. It is never to speak ill of any of your fraternity, whatever you may think. You will do yourself no good, and it will only be thought that you are jealous."—*Dr. Chesterfield's Letters to his Son.*

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, held at Washington, D. C., May 29, 30, and 31, and June 1, 1894.

(Continued from Vol. 45, page 762.)

SECOND DAY, WEDNESDAY, MAY 30TH.

Aero-urethroscopy with a New Instrument.—DR. W. K. OTIS, of New York, read a paper giving a history of the subject to the present time and showed his improved instrument. Also cystoscope with eye-piece at a right angle for catheterizing the ureters

DR. BELFIELD showed a tube with catheter curve, with opening at angle and light in tip of tube, for use in deep urethra and neck of bladder, and catheterizing the ureters.

A Needle-holder for the Hagedorn Needle.—DR. BROWN, of New York, presented an instrument of this nature. The very secure grasp of this small pointed holder—equally secure whether a very large or a very small needle be used—is due to the relief from strain which the jaws of the instrument derive from a considerable degree of spring which the handles have just behind the principal hinge. The four separate parts which make up the needle holder are readily detachable. The perineal tube holder serves the purpose of keeping the large rubber tube securely in every position desired, whether this be depth of insertion, or upward, downward, or lateral presentation of the eye of the tube. It facilitates removal for cleansing or making any little adjustment necessary. The patient can himself make any such changes. In case of continuous drainage these apparently minor points are of considerable moment in rendering an uncomfortable condition much more tolerable and manageable. Dr. Brown also showed a modification of the Clover crutch, with cross-bar removed from the field of urethral instruments

Discussion by Drs. Bryson and White.

Stone in the Bladder; Choice of Operation.—DR. WILLIAM H. HINGSTON, of Montreal, Canada, read a paper with this title. In cases where all the cutting operations are equally practical, he prefers the lateral method, and offers the following principles:

1. Lithotresis (and by lithotrity I mean that more perfect method which was foreshadowed by Mercier, in France, and brought to its highest perfection in America). In all cases of adults where the stone is neither too large nor too hard for the lithotrite.

2. Lithotresis, where the urethra is, or can be made, sufficiently capacious for the crushing instrument.

3. Lithotresis in children, however young, where the urethra can permit the passage of a crushing instrument.

4. In very young children the cutting operation is preferable, the precise age at which lithotrity is possible must vary with the calibre of the canal, which in young children greatly varies in its capaciousness and in its capacity; when the urethra in the child is not and cannot be made fit to receive the lithotrite, the cutting operation to be chosen is the lateral method.

5. In cases of stone in the aged, where enlarged prostate not only prevents the stone being seized, but its dimensions being ascertained, we should act as if the calculus were of large size and incapable of reduction, and proceed to operate by the suprapubic method.

DR. CHISMORE, of San Francisco, said the general character of the paper commended itself to good sense. The size and hardness of the stone should not, in his mind, exclude lithotrity. If when the stone is seized and considerable pressure is brought to bear and it does not break, by waiting, the elasticity and spring of the instrument in many cases will work its way through stone. If this fails, should let go and grasp the edge and break off in this way.

DR. POST, of Boston, related a case of stone in the bladder in a child with hip disease, so that he could not be put into the lithotomy position, and the position of legs was such that lithotrity could not be performed. He did a suprapubic operation and found the peritoneum adherent and extending down to the pubes, and was obliged to cut through it.

DR. BANGS, of New York, said that in choosing operation, the removal of the stone is only one thing. There is a disease causing stone, and we are frequently obliged to use a cutting operation for drainage to bladder and pelves of kidneys.

DR. WILLIAM JUDKINS, of Cincinnati, showed a specimen of calculi formed around a stitch left in the bladder after operation by the suprapubic method in a case where it was impossible to get in a crushing instrument.

He thought this case illustrated the stone disease mentioned by Dr. Bangs, and he soon expected to have to do another operation.

DR. WATSON, of Boston, was glad to get the authority of Dr. Hingston in favor of the operation of lithotrity. The array of cases presented by Dr. Chismore the previous day was the most remarkable on record. And he would like to ask Dr. Chismore if he could explain that fact·

DR. CHISMORE, in reply to Dr. Watson, stated that in his cases of seventy-one operations without a death, the good result was due partly to the hardiness of the men and to the fact that the stones were small, and not entirely to the local anæsthetic. He made the operation short, and if necessary completed it at another time.

DR. BRYSON, of St. Louis, said he was in accord with the paper, and the choice of operation depended on the condition of the bladder and urinary organs, and the size and consistency of the stone. When he chose cutting operations, it was because of the condition of the bladder, kidneys, and prostate.

DR. HINGSTON, in closing the discussion, said that he was not wedded to any method. There is no disease of bladder and kidneys where lithotrity is not indicated. The stone causes the condition, and if you remove the cause the condition will improve. His greatest number of cases without death was eighteen.

Urine Leakage and Stricture Formation.—DR. JOHN P. BRYSON, of St. Louis, read a paper of which the following were the conclusions:

1. The close resemblance in the tissue elements, their arrangement, and effect upon the related normal structures, point to an identity of the etiological factor, and give support to the doctrine of urine leakage

2. Observing the prolongation of the urethral epithelium on the fistula wall in an effort to create an adequate artificial channel for urine, and seeing that the epithelium lining the stricture also participates in the battle against urine leakage, we may take fresh hope of radically curing strictures even of the pendulous urethra, by such means as tend to restore or rehabilitate the urethral lining.

3. Merely diverting the stream of urine for a time without such restoration of the lining mucous membrane would fall into the category of palliative treatment, along with urethrotomy and the various methods of dilatation.

DR. TAYLOR, of New York, regretted that he did not bring specimens showing the stricture formation from gonorrhœa to the completion of the process. The pathological appearances do not warrant the theory of urine leakage. There is a tendency always for the stricture to be covered with squamous epithelium, which becomes glazed over and prevents urine leakage. If it was not covered with epithelium it was an ulcer, and the appearance of the cells around an ulcer was not water logged.

DR. BRYSON, in closing, was glad that Dr. Taylor raised the point of urine leakage; all authors referred to strictures as if there were but one form, when there were really two: 1. Inflammatory. 2. Cicatricial stricture

begins with a multiplication of fixed cells. The difference between scar-tissue and stricture-tissue was that scar-tissue is quiescent, while stricture tissue continues to grow.

The Possibility of Overcoming Permanent Stricture of the Deep Urethra without Resort to External Urethrotomy.—Dr. J. Blake White, of New York, detailed the histories of two cases relieved without external urethrotomy, and concluded that, ordinarily, an external urethrotomy might have been thought necessary, and possibly performed; that the spasmodic element, always present to a greater or less degree in deep organic structures, often tends to obscure the judgment of the examining surgeon as to the possibility of overcoming it through less grave procedure than external urethrotomy, and that where a deep organic stricture, not traumatic, is present, thorough and skilful removal of obstructions in the anterior urethra affords the surgeon every opportunity to relieve it by careful dilatation with graduated sounds; since the anatomy of the structure of the deep urethra is such that it yields more readily to dilatation, and absorption is more likely to result in this location from judicious and well directed pressure by the sound. Incision at this point is apt to result in cicatricial formations, which are very apt to necessitate at some future time another operation for the relief of the symptoms which apparently made the first operation a necessity.

Dr. Taylor, of New York, thought the urethral spasm was due to instruments. That if we would use a soft rubber catheter in those cases we would have no trouble, while it resented the approach of the steel instrument.

Dr Martin, of Philadelphia, was glad to hear of the cure of stricture with the sound instead of the knife. He reported a case of stricture of the deep urethra with perineal fistula in a patient who would not consent to operation. He finally got a guide into bladder and dilated up to 10th to 12th French size. The man did not return for six weeks, and the condition was as bad as before. He then dilated up to 26th French, and it had remained at that point.

Dr. Lewis, of St. Louis, referred to a case where he could easily pass a steel sound, but could not pass a soft catheter.

Dr. Bryson, of St. Louis, said that it is hard to separate two processes. When we cut a band of cicatricial tissue we do not destroy the band, but we make dilatation possible.

Dr. Hingston, of Montreal, thought Dr. F. S. Otis's rule of gentle dilatation, with cutting in the old cartilaginous strictures, the best.

Dr. Brown, of New York, said that there are cases in which, after internal urethrotomy, sounds can pass through a previous closed deep urethra. Advises to do internal urethrotomy first and then try sounds.

Dr. Otis said there was no doubt that strictures can be dilated. But in a case like Dr. Martin's he should have done the external urethrotomy. He does not agree with Dr. Bryson, that cutting does not remove the stricture; spasmodic strictures have occurred many times in his practice, and he does not think them due to instruments.

Exfoliation of the Mucous and Submucous Coats of the Bladder, Preceded by Renal and Vesical Calculus.—Dr. Alexander Stein, of New York, referred to the fact that fifty cases have been reported, forty-five in females and five in males. After a careful résumé of the subject, he gave a detailed history of a male case treated by himself, which he summed up as follows:

In summing up this suggestive history, we find that the nephritic colic was invariably referred to the left groin. About six months before he came under observation, he had retention of urine, in consequence of the impaction of a calculus in the urethra. Shortly after this there occurred an intra renal distention from impaction in either pelvis of the kidney, or possibly at the vesical extremity of the ureter. A swelling appeared in the left lumbar region, which was doubtless a hydro- and a pyonephritic tumor. After stagnation of the urine in the pelvis of the kidney, alkaline fermentation was obtained, and a pyelitis was excited which, after the dislodgement of the offending calculus, and the emptying of the pyo nephritic sac per viam naturalem, there was left a favorable nidus for the subsequent formation of crystals of triple phosphates, which, after descending into the bladder, continued their destructive work. The stone was removed by crushing and fragments washed out for a month; there was a relief of symptoms, and then a gradual accession of cystitis, which was followed after a time by the appearance of the exfoliated shreds, which he continued to pass for two weeks, in such quantities as to represent the entire lining of the bladder.

Third Day, Thursday, May 31st.

A Plea for the Excision of the Initial Lesion.—Dr. Edmund E. King, of Toronto, Canada, sent a paper which was read by the Secretary. The following were its conclusions: 1, The early excision of chancres, that is within a few hours after their appearance, will abort the disease; 2, the excision of any unhealed chancre will moderate the subsequent secondary manifestations; 3, that it is the cleanest, least painful, and most scientific method of treating the lesion.

Epithelioma of the Penis.—Dr. Edward Martin, of Philadelphia, detailed a case operated on by himself as a text for his paper, and presented the drawings of a cross section of the growth, showing typical epithelial formation.

Ribbon sections were taken of the whole substance of the penis passing from the centre of the growths backward. The line of demarcation between the healthy and diseased tissue was, as is usual in epithelioma, rather sharply marked. In regard to the etiology of the disease, phimosis is the most common. He quotes various authorities regarding the contagiousness of the disease, and thinks that it is not unreasonable to believe that the contagious nature of a cancer may some day be clearly recognized. He also refers to chancre occurring in the cicatrix of a syphilitic primary lesion, but the scar he thinks simply acted as a focus of lessened resistance.

The prognosis of epithelioma of the penis is now guardedly favorable. Before the epithelioma is fully developed and only folliculitis and a few watery growths present, prompt and efficient intervention will be followed by a radical cure in the majority of cases.

If the disease progresses to the involvement of the inguinal glands, the operations ordinarily resorted to are insufficient and recurrence *in loco* takes place.

As to the operation, this, in the precancerous stage, that is when a case cannot be clearly recognized as cancer, may consist in thorough cauterization, or in excision followed by cauterization. In case the wound does not heal kindly, amputation of the penis should be performed at once. If cross-section shows involvement at point of amputation, extirpation is indicated. In the latter case, when there are any remains of virility, castration is also advisable.

In all cases where the amputation of the penis is required I believe the groin should be opened freely and the entire chain of lymphatic glands should be removed, whether they are enlarged or not. The two points to which the paper was designed to call attention are: 1. That it is not justifiable positively to deny the possibility of contagion in epithelioma of the penis. 2. That where amputation of the penis is required the inguinal glands of both sides should be dissected out, even though they are not appreciably enlarged.

Dr. Taylor, of New York, spoke of the coincidence of cancer in the syphilitic as it appeared after the syphilitic process had ceased. When occurring in a scar, as in this case, it was undoubtedly due to irritation. In reference to contagiousness of cancer, he referred to a case where the man, to do penance for past dissipation, had had frequent intercourse with his wife, who had cancer of the womb, without any injurious result.

Dr. Lewis, of St. Louis, suggested the advisability of castration in these cases, as it diminished blood supply and consequent irritation which would favor recurrence.

Dr. Chismore, of San Francisco, referred to a case which he operated on by excision of the cancerous mass, leaving the inguinal glands. Six weeks later there was no recurrence and inguinal glands smaller.

In concluding the discussion, Dr. Martin, in reply to Dr. Lewis, advised castration when extirpation of the entire penis is performed; when only partially removed there is a certain amount of sexual satisfaction. The question of the contagiousness of epithelioma of the penis is still *sub judice*, and we may have to regard it as a contagious disease. Should advise a partial amputation and then examine the periphery of the stump, and if no cancerous infiltration, there is little danger of recurrence *in loco*. Inguinal glands in all cases should be removed.

Inflammation of the Seminal Vesicles.—Dr. R. W. Taylor, of New York, said that this condition was not recognized until the last few years, and it is mainly through the writings of Mr. Jordan Lloyd that an impetus to its study has been inaugurated. The affection is almost always secondary to gonorrhœa, occurring in the third or fourth week, or to hyperæmia of the posterior urethra due to masturbation and venereal excesses, or to inflammation of this region due to traumatism, catheterization, endoscopy, and strong injections.

Symptoms are similar to those of posterior urethritis, and those given as diagnostic of the several forms of prostatitis.

Course is similar to epididymitis, and at the end of a week or ten days the symptoms become ameliorated and resolution sets in.

Chronic Seminal Vesiculitis.—This form occurs when resolution fails in the acute form. The symptoms are usually obscure and vague. These disturbances are mainly of two forms: First, those of lowered power; and second, those of erythism of the sexual organs.

Diagnosis can only be made by rectal examination. The patient should bend body forward, standing with feet about a foot apart. The examiner can place foot on chair. Elbow on knee to get pressure and overcome the perineal muscles. The bladder should be full.

Frequently the amputated vas deferens is mistaken for the seminal vesicles.

Treatment.—Leeches to the perineum, injection of cold water in the rectum, and packing rectum with ice if the procedure is pleasant to the patient; opium in suppositories, diluents and saline cathartics may be administered if required. Should an abscess form, it may be reached by means of a long incision just anterior to the anus, care being taken not to cut urethra, prostate, or rectum.

Treatment of the Chronic Forms.—By good hygiene, tonics, and the treatment of posterior urethritis, if it exists. He does not agree with a recent paper of Dr. Fuller's, of New York, and shows two anatomical specimens to prove that the seminal vesicles are so placed that it is impossible to reach by the finger sufficiently to milk or strip successfully.

Dr. Allen, of Boston, said that diagnosis could only be made by rectal examination, as the urinary symptoms were not characteristic. In the treatment of terminal vesiculitis, he had been discouraged by Dr. Taylor's anatomical demonstration of the normal position of the seminal vesicles and the inability to milk them. He had witnessed in some cases that after squeezing there had been diminution in size.

Dr. Martin, of Philadelphia, said he had been trying for some time to examine the seminal vesicles in all cases of epididymitis, and in a few cases only had he been enabled to make out the seminal vesicles. And in these cases there was the presence of disease or chronic enlargement, and that it had been impossible for him to make out by rectal examination a normal seminal vesicle. He showed several drawings representing what he had felt in certain cases. In most cases the symptoms were those of posterior urethritis, but in three cases pain was referred to the hip of corresponding side and radiated down only to surface of thigh. He had found that rectal injections gave the greatest relief, and for examination the partial bending of the body was the best. In some cases the lithotomy position was good.

Dr. Brewer, of New York, spoke of pressure in chronic cases being followed by the ejaculation of a clear fluid which rapidly coagulated. The specimen shown by Dr. Taylor proves that we cannot strip the seminal vesicle completely, but by pressure had diminished the size and found discharge containing spermatozoa from the urethra, and in these cases had obtained an improvement.

Dr. Allen, of Boston, would like to put himself on record as agreeing with Dr. Martin in the difficulty of feeling the normal seminal vesicles, but regarding the treatment he agrees with Dr. Brewer.

Dr. Hayden, of New York, had for some time been examining cases at the Vanderbilt Clinic, and added his testimony to the difficulty of feeling the normal seminal vesicle. He was able to feel them only when there was a prostatitis or epididymitis.

Dr. Bangs, of New York, was glad to hear that others had had difficulty in feeling the seminal vesicles, as he could only feel them when enlarged. Yet we can express a fluid, but he was not willing to admit benefit from stripping.

Dr. Weir, of New York, said that within the urethera, the last year, his attention had been called to perineal abscesses from diseased seminal vesicles. They can be reached and removed, if necessary, by a transverse incision in front of anus until we reach cellular space, and through this reach the vesicles, and he had removed those that were tubercular.

Dr. Belfield, of Chicago, called attention to the importance of the sinus pocularis, which varies much in size, and when swollen would produce swelling where we would expect to feel the beginning of the seminal vesicles.

Dr. Bryson, of St. Louis, said the anatomical demonstration called to mind conditions seen several times. He was astonished to find that the vas deferens was so large, and was probably frequently mistaken for chronic enlargement, or for tuberculosis. There was a condition caused by seminal engorgement, and the symptoms were relieved by emptying a portion of the seminal apparatus. This occurred in free livers who over-indulged in sexual intercourse. They would complain of pain in rectum, which was almost constant, not due to local causes. But by introduction of the finger into the rectum and emptying the distended pouch there would be complete relief from the pain.

Dr. Chismore reported a case where he could milk, from a sac occurring on either side, ʒ j. of fluid containing an abundance of spermatozoa.

Dr. Taylor, in concluding the discussion, stated that we should be careful in making pressure on distended sacs felt per rectum. The amputation of the vas deferens was sometimes so marked that it could easily be mistaken for the seminal vesicles.

Surgical Interference in Tubercular Kidney.—Dr. John P. Bryson, of St. Louis, read this paper. In 174 cases of tuberculosis of the genito-urinary tract observed by the author, only 18 gave unmistakable evidence of involvement of the kidney. He gave in detail the histories of several cases treated by surgical methods, and gave the rules usually followed, given as a guide for surgical interference. The conclusion he had arrived at was, to operate only in cases of emergency. The probability of trouble in the other kidney, its absence or the presence of chronic nephritis, made the operation a very serious one. Also the fact that there was probably tuberculosis of other parts of the genito-urinary tract, or even of the lungs, even to drain a tubercular cavity in any part of the body was of doubtful efficacy. To remove a stone or to open an abscess which is not sufficiently drained by ureter, or to remove a suppurating kidney which is affecting the whole system, when we can assure ourselves of

the soundness of the opposite organ, are the only surgical interferences he considered justifiable.

Dr. Bangs said that in closer study of genito-urinary tuberculosis for the past two years he had become more conservative. Good hygiene was the only cure for tuberculosis, and that combination of gases known as "fresh air." Vesical tuberculosis is made worse by instrumentation. He had performed all kinds of operations, but the result was not good. He sends those cases away, Southern California is a favorite place, the warm climate is less stimulating to kidneys, and is therefore preferable to cold. The effect of operation or other traumatism is to make the condition more acute. He applied same rules to tubercular testicles. In the cystoscopic examination of the bladder he frequently found a pulpy condition, rarely only can he find ulcers. He had begun to look upon that condition as tubercular.

Dr. Keyes, of New York, had not made a special study of genito urinary tuberculosis, but thought the surgeon should stand aside and operate only in emergency; there was too much surgeon and not enough medicine in these cases. He has tried surgery, and it failed to help him. Transplantation of the patient was the last means of cure. He did not consider the pulpy condition spoken of by Dr. Bangs always due to tuberculosis. He had never seen it above, always at the base of bladder; bleeds on contact with instrument. He had seen it in strictures and pyelitis where the base of the bladder is bathed in pus, also in tuberculosis.

Dr. Belfield, of Chicago, added his testimony to non-interference in tuberculosis of genito-urinary tract. He had operated eight times, and there was only one case that gave him any satisfaction. That was one in which the drainage was kept up eighteen months. Later died of general tuberculosis. Reported a case of peri nephritic abscess which was aspirated, and sent to a suitable climate with improvement.

Dr. Bryson, in concluding the discussion, said he did not think there was characteristic appearance of the base of the bladder in tuberculosis. The question of involvement of the other kidney is very important. He hoped that the new instrument shown yesterday by Dr. Belfield might help us; also the presence of albumin and casts were important in making a correct diagnosis.

Cystitis and Pyelonephritis, Due to the Colon Bacillus, Requiring Nephrectomy.—Dr. F. Tilden Brown, of New York City, related a case which presented in the surgical service of Dr. McCosh at the Presbyterian Hospital, and reported by Dr. Brown to bring out an expression of opinion regarding the importance or non-importance of the colon bacillus as a pathological agent. An interesting feature of the operation was rupture of the renal artery, attended with very serious hemorrhage, which was successfully controlled by long clamps left in place for fifty-eight hours.

S. W. D——, male, aged forty; widower; United States; masseur. No rheumatism, tuberculosis, gonorrhœa, or syphilis. History; In 1886 sustained an injury to the left side by a fall, which probably injured somewhat the left kidney, as slight functional impairment of urination and sexual powers followed. He then began treatment by the passage of sounds. At the end of the fourth month of this treatment he was conscious of being hurt by a larger sound than had been passed before. Ten minutes later he noticed hæmaturia. Cystitis promptly supervened, and he entered a hospital where, at the end of ten days, he was cured. Returning to his former doctor he submitted to the introduction of a sound, and the next day returned to the hospital with a relapsing cystitis, which soon extended to a left-side pyelitis. He was confined to bed for three weeks. He had a great deal of pain and occasional hæmaturia. After a while he noticed that the urine would at times be rather scanty and comparatively clear. Again the urine would suddenly increase in quantity and contain a good deal of pus.

This state continued for two years, when in 1890 he first noticed an enlargement in the region of the left kidney. This abdominal tumor was not permanent, but regularly subsided after a brief period of polyuria attended with pyuria. In September, 1893, the patient substituted for boric acid solution, as a vesical lavage, peroxide of hydrogen, twenty per cent. solution. Immediately after its first employment he was seized with a chill; high fever and sweating ensued. At irregular intervals every few days he now had a repetition of these chills. He noted extreme distention of the abdominal tumor, followed by its disappearance, and increased quantity of urine. Four such attacks were noted between September, 1893, and January 23, 1894, when he entered the Presbyterian Hospital. At this time his temperature was 98° F.; pulse, 84; respiration, 20.

Physical examination was negative, except that on the left side and well upward border of the ribs, on deep palpation, some pain and resistance could be detected. As the tumefaction he had himself been able to notice did not now exist, he was kept under observation until February 20th. During this time his urine, drawn by sterilized catheter, gave a pure culture of colon bacilli grown on agar, and tested by reaction on milk. The specific gravity of urine was 1.020, acid, albuminous; contained pus, and occasionally blood.

During the week previous to February 20th, pain in left side has been quite constant. Abdominal distention has increased, and a tumefaction in the left kidney region has been quite marked.

Nephrectomy by Dr. McCosh: Ether. During the operation many firm adhesions are met with after the ureter has been ligated and divided, and while detaching the upper segment of the large pyonephritic mass the renal artery is ruptured. During a critical hemorrhage the vessels are caught in long clamps, which are left in place forty-eight hours. A slow but uneventful convalescence ensued. The colon bacillus is again cultivated from the removed kidney, and again from the urine on April 2d, and again on May 23d. The patient has gained twenty pounds. The urine is free from albumin.

Point for consideration: Was the left kidney damaged by a previous traumatism, and thus rendered susceptible to ascending infection at the time of acquiring cystitis? And was the cystitis due to a trauma inflicted upon the posterior urether by a sound, and to a simultaneous implantation of septic matter in the form of the bacillus colli communis?

Is the continued presence of the colon bacillus in the urine, despite bladder irrigation with antiseptics, to be ascribed to the blind canal made of the ligated ureter? Is entire removal of the ureter to be advocated in nephrectomy for septic matter? Does the presence of the colon bacillus at present render the patient more liable to a pyonephrosis of the remaining kidney in case it becomes impaired by traumatism or disease?

Fourth Day, Friday, June 1st.

Tumor of the Testicle.—Dr. R. W. Taylor, of New York, showed drawings of tumor of testicle removed by him. The history was as follows: N. D——, aged twenty-seven; United States; brakeman. Had had gonorrhœa twice. A year ago patient said he had a chancre, and about the same time he noticed a small hard lump at upper part of right testicle, increasing steadily in size. About six months ago he was struck in the testicle by a peach, since which time he thinks the tumor has grown more rapidly.

On admission to hospital the testicle was enlarged to about the size of two fists. It was hard and painless, the inguinal glands very large and hard. The testicle was removed by Dr. Taylor, and was adherent to the scrotum, the inguinal gland was not removed, as the patient objected. He was discharged cured in a month. The tumor was examined by Dr. Van Giesen, of the College of Physicians and Surgeons. Section showed: 1. portions of the tumor a perfect type of adenoma; 2, a less

perfect form of adenoma on the border line of carcinoma; 3, sarcomatous tissue; 4, hyaline cartilage.

This disease begins slowly and insidiously, forms a large, indolent, smooth, oval, dense, and sometimes elastic, not painful or tender, surface, usually smooth, and even later may become bassy and fungating; sometimes there is hydrocele, rapidity of growth; when large produces a dull, dragging sensation; usually begins in early life. Conche, in a study of thirty cases, in twenty-four of which the observer notes the affection developed between the ages of twenty and forty. Uttial Johnson described a case in a child, two years and nine months of age, in which the trouble began at the third month of life.

Dr. Bangs asked if Dr. Taylor made the diagnosis at first. Dr. Taylor replied that he gave internal remedies for syphilis, but the tumor got worse and produced a fungating mass.

Dr. Bangs then detailed a case in which there was no venereal history, the patient was in general good health. There was an ulcer on anterior surface of scrotum appearing like a malignant growth, had an indurated base and bled easily; necrosis of the central portion took place, a portion was removed, and the pathologist sent report of epithelioma. The man refused operation, but the case healed up entirely.

Dr. Bryson, of St. Louis, said that in malignant and tubercular growths the exhibition of potassium iodide made tendency to bleed greater. He had never seen a case of simple growth—always more than one element. The surgeon had this before him. Make diagnosis between syphilis and these growths by antiseptic treatment; if not syphilitic or tubercular should be removed. Commends non-removal of inguinal glands, although it does not agree with modern surgical principles. He would like to ask Dr. Bangs his rules.

Dr. Bangs replied that he removed all enlarged neighboring glands in all cases.

Dr. Keyes, of New York, wanted to ask if in the case reported there was involvement of the scrotum. For if the tumor is confined to testicle and cord, it returns in peritoneal glands. But if the scrotum and surrounding tissue are involved, inguinal glands should be removed.

Dr. Bell, of Montreal, detailed a case of multiple tumors of the brain, and the question of syphilis was considered. Later there developed fibrous growths of the epididymitis, the right side grew slowly and became as large as the tumor described by Dr. Taylor, and showed multiple growths. Growth on the other side did not increase, but later in cord began a large enchondroma which has now begun to fungate.

Dr. Taylor, in concluding, said that he had given the patient antiseptic remedies for a while. His duties as a brakeman caused frequent contusion and irritation of the testicle. The tumor was fungatory and the inguinal glands were enlarged. They had grown smaller since removal, as they frequently do in epithelioma of the penis. Perhaps the enlargement is purely inflammatory. He believes in thorough removal of inguinal glands in such cases.

During How Long a Period is Syphilis Communicable?—Dr. James Bell, of Montreal, reported a case which was thoroughly treated, and married two years and eight months after development of secondary symptoms. During this time he took treatment regularly and showed no evidence of the disease. His wife contracted genital chancre, and developed constitutional syphilis. The author gave history in order to show: 1, That the husband was properly treated, and was, as far as could be seen, free from the disease when he married; and 2, that there can be no doubt as to the diagnosis in the case of the wife. For the rest I believe the husband to have been perfectly honest in the matter, and the wife to have been in every respect above suspicion. In my opinion this must have been a case of blood inoculation.

The second case, in which a man contracted syphilis a few years before he was married, and before the sore appeared the wife became pregnant. She never showed any symptoms of the disease, although she was given protoiodide of mercury pills up to time of delivery. She remained in good health and was delivered in full term of a fine healthy child, which she nursed for six months, when her milk failed and she was obliged to wean it. The child (now nine months old) has never shown a sign of syphilis, and is a typically healthy, well-nourished baby.

Dr. Taylor was very much interested in the two cases, especially the first. In these cases we must eliminate extra-genital infection. It was either a case of great pertinacity of the length of the infecting period, or there was a lover somewhere, and he was inclined to the latter view.

Dr. Bangs thought that as the time was only two years and eight months, it was not unusual for infection to occur.

Dr. Keyes wished to put himself on record as thinking that infection, at least up to the end of the third year, was quite possible.

Dr. Judkins, of Cincinnati, related a case where a man had chancre and wife aborted, although impregnated before the development of the primary sore.

Dr. Bell, in concluding, stated that he was as sceptical as Dr. Taylor, but if there was ever a case where you could trust your evidence, this was surely one.

Dr. Chismore made a few remarks, resigning the chair to Dr. Bangs, the newly elected President. The Association then adjourned until the following year.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Eleventh Annual Meeting, held in Washington, D.C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 763.)

Second Day, Wednesday, May 30th.

Climatic Treatment of Phthisis.—Dr. H. B. Moore, of Colorado Springs, had sent a paper entitled "A Plea for the Earlier Recognition of Pulmonary Tuberculosis, and the Adoption of Proper Climatic Treatment." Owing to the absence of Dr. Moore his paper was read by title.

Three Years' Experience in the Sanitarium Treatment of Pulmonary Disease near Boston.—The second paper was read by Dr. Vincent V. Bowditch, of Boston, with the above title. He presented the results of the treatment of pulmonary disease for three years at the Sharon Sanitarium, near Boston. He referred to the well-known Frankenstein Sanitarium, near Frankfort-on-Main, Germany. It is built on an elevation of fifteen hundred feet above sea-level. It was a famous resort for the wealthy classes. The Sharon Sanitarium was on a hill four hundred feet above sea-level. It was for the working classes, largely shop-girls. He referred to the City Sanitarium established in New York by Dr. A. L. Loomis, and Dr. Charles Quimby, of that city.

It goes almost without saying that the climate of New England is deemed unfavorable for consumptives What can we do for the poorer classes? It has been cod liver oil, cough sirup, and advice about air and food. Left to old-time methods they slowly fail. The ordinary American country boarding-house is not suited to such cases, they are badly ventilated and the food is badly cooked.

The building at Sharon is a beginning, it can accommodate nine patients, all females. It was purposely constructed for an abundance of sunlight and pure air. Every room is freely ventilated. One patient in a room. Building has broad piazzas, where patients are kept out in the pure air. No carpets or mats within to hold dust. No sweeping allowed. Damp cloths are used. Sputa are destroyed. Cups used for that purpose are burned.

The Sharon Sanitarium opened February 9, 1891. Of 48 patients 8 were bronchitics, the remaining 40 had various forms of phthisis—10 had been discharged with the disease arrested. In no case did he use the term cure. The majority had been away from eighteen to twenty-four months. All reports from them were favorable. In

several cases both lungs were involved. Some of these left improved. In the 8 arrested cases bacilli were present in but 3. He often found that the bacilli were not present in cases presenting all the evidences of phthisis, *i.e.*, cough, hemorrhage, sputa, malaise, and night-sweats —in fact, all of the usual symptoms, but in certain cases no bacilli. One case had been in two years, and had gained twenty-eight pounds; another got fat and well; another had had cough and hemorrhage, had gained fourteen pounds and a half in four months. Now she is in California, with an excellent prospect for recovery. In some twenty-five per cent. the disease seemed to be arrested, and there was general improvement in thirty-three per cent.

Bacilli had been found in cases classed as improved. In six cases of this nature the results had been very satisfactory.

He advocated the sanitarium form of treatment. Previous to opening the Sharon, he feared that having such patients in a community would be unfavorable to them. Experience had shown his error. What was the effect of the proximity of patients one to another? At first, it caused depression, but it soon wore off. They are kept under control, hence the direct benefits of such a system as the sanitarium treatment, under skilled management. All can be carefully watched. It was his rule to receive cases where the early symptoms were present. If they failed to improve in a few weeks, he advised them to return to their homes.

Referring to methods of treatment, daily visits of the physician—a sanitarium should have a resident physician. Their chief aims were fresh air and good food. He deems them absolutely necessary for recovery. Exercise within fatigue, rest in the open air, even in the coldest days in winter, patients being carefully wrapped.

As a rule he avoided drugs. Cabinet treatment and pulmonary gymnastics were most valuable. He had no faith in the germicidal action of drugs or vapors. He was not wholly convinced of the value of tuberculin.

In making a brief report on three years' work, he endeavored to leave out the personal equation. Our sole aim should be to do our best for our patients, and in reports to deal with the truth and nothing but the truth.

Dr. Von Ruck, of Asheville, S. C., deemed Dr. Bowditch's experience and observations valuable. Climate is not so important; it is not so much where it is done, as how it is done. While practising in Ohio, he had had about the same results as those given by Dr. Bowditch in fifty-eight observed cases. In twenty-five per cent. there was arrest, and improvement in a third of all under observation. Benefit may be had at home if patients will do as they are instructed.

He did not concur in Dr. Bowditch's views regarding the value of tuberculin. He uses it still, and to day has greater faith in it than ever. Early cases of phthisis want to wait. They invariably think others worse than themselves. Tuberculin applied in the earlier cases, as recommended by Dr. Koch, in his hands gave excellent results. It has a stimulating effect on the tissues. It can be pushed to produce congestion, some using as much as 100,000 milligr. in a month. Such treatment simply does harm, and was not indicated by Dr. Koch. It was overdone. Using tuberculin in the smallest doses gives an effect in from five to ten hours. Where fever is produced the limit of the dose has been used. He firmly believed that the results will be as good as Dr. Koch led us to hope for, and which the speaker firmly believed we would attain.

Dr. J. H. Musser, of Denver, Col., said that we had reached a time when, if tuberculosis is properly managed within certain limitations, it might be deemed a self-limited disease, and the tendency is to cure.

Plans and sanitaria such as those advocated by Dr. Bowditch, deserved the warmest encouragement. Sanitaria within the limits of cities for the poorer classes. If a sanitarium is not properly conducted it will fail. Careless methods will kill it. Reference was made to the infectiousness of the disease.

Dr. Quimby, of New York City, gave an account of the founding of the New York Sanitarium, and what they hoped to accomplish. A lady well known in New York, noted for her charities, had enabled them to give the scheme form and substance. He was of opinion that hitherto too much had been said relative to phthisis, and too little as to the treatment of phthisics. The object of the New York Sanitarium was to relieve the working classes, and aid and advise those having a fortnight's holiday in the year. The consulting staff of the sanitarium would be requested to see all cases on entrance and make a forecast as to their probable expectation of life. This he wanted for the purpose of comparison. He outlined what they hoped to accomplish.

Dr. Curtain, of Philadelphia, spoke of some results at the Philadelphia Hospital, in the phthisis ward. During 1888 and 1889, the patients therein had tubercular sputum. In 1890 influenza appeared, when half of the old cases died. In 1891, or after the influenza epidemic, out of 28 cases 15 had no tubercle bacilli. He conducted a number of post-mortems. Ulceration of the lungs was found, but the closest examination of the tissues failed to detect bacilli Recently a German bacteriologist had found a new bacillus, different from the tubercle bacillus; this, he thought, might explain these cases.

Creosote, Guaiacol, and Benzoyl of Guaiacol in Phthisis.—Dr. Roland G. Curtain, of Philadelphia, read the paper. He gave a *résumé* of his hospital experience at the Philadelphia Hospital, stating that one object was to elicit a discussion on the treatment of tuberculosis by creosote and guaiacol. Dr. Glasgow, in 1891, read a paper on the action of guaiacol. In 1892 Dr. Jacobi, of New York City, dealt with the treatment. Twelve years ago he, the reader, had used Declats's syrup of phenic acid. Guaiacol and phenic acid gave much the same results. Subcutaneous injections of phenic acid were very painful. One patient frankly said that he preferred death. In his experience, as the result of the use of phenic acid, there was an improvement in the appetite and an increase in flesh, less dyspnœa. Speaking of beechwood creosote, he said that it and guaiacol chemically have much in common. Dr. J. J. Whittaker had published results in 1893. When creosote is pure it is harmless and easily borne by the stomach. It has no effect on the bacilli. Some patients take small and others large doses. Creosote may produce hæmaturia. In those who bear it best as far as the stomach is concerned, increase in weight follows. In acute phthisis with high temperature, no benefit results from guaiacol. The class most benefited is that where there is slight fever and poor digestion. Dyspepsia is cured by phenic acid; also greatly benefited by guaiacol. He uses the latter in the form of pil's. It acts well in chronic ulceration of the lungs. He does not believe that it has any specific effect on the lungs.

Benzoyl of guaiacol was introduced by a German physician. He has not found it any better than guaiacol, and it is expensive. He does not deem it as reliable as guaiacol. Guaiacol is not so liable to produce irritation of the kidneys; when pure you know what you are administering.

Dr. A. L. Loomis, of New York City, did not believe that any of the agents named exert any special action or effect in the disease. In many cases the patients seemed to do just as well without such remedies. When introduced into the stomach there is no evidence that they have any other effect than to improve the digestive powers in a certain class of patients. Some patients were saturated with creosote.

Dr. Robert H. Babcock, of Chicago, had used both creosote and guaiacol. Some patients stood them well, others did not. He recalled a case where one hundred and fifty drops had been given in twenty-four hours, with benefit. Previously there had been hemorrhage. She was a young woman. There was a cessation of the

symptoms, and the physical signs all improved. Many patients cannot tolerate it. It allays fermentative processes in the digestive tract. Guaiacol is used after meals. He kept it up until the urine became of a dark-green color, then reduced the dose to one-half, then gradually began decreasing it. Some patients cannot take either.

Dr. Von Ruck, of Asheville, S. C., used creosote four years ago, hypodermically. In four cases, who persisted in spite of suffering, he continued the remedy for two months, they received four grammes a day. He watched the urine, tubercle bacilli were present in all the cases. It had no effect on the bacilli. He was satisfied that they got good results from creosote. It was particularly beneficial in bronchial cases, also of marked benefit in gastro intestinal cases.

Dr. W. M. Gibson, of Utica, N. Y., found that creosote had a direct effect on the blood. Following a moderate dose of creosote after a meal, there is an increase in the leucocytes, producing, he said, better phygacytosis; a count of the corpuscles would prove it.

Dr. Elksner, said that in hospital and private practice he had got very good results with creosote. He said that it was most difficult to make an early diagnosis. In many cases no bacilli were present, unless there had been infiltration in the lungs; there must be breaking down to get the bacilli.

Dr. J. B. Walker, of Philadelphia, deemed the odor of creosote in the breath of such patients very objectionable; said that whether the skin will take it in or not, the skin will give it out; that such people in street cars and elsewhere were unpleasant. If not anti-bacillary, why give such large doses? He believed it to be anti-catarrhal, and that it has a modifying effect on the tissues. It does not kill the tubercle bacillus.

Dr. A. L. Loomis had found tubercle bacilli without destruction of tissue. They may be present in a patient without any destructive changes in the lungs, or air-passages. He had got bacilli in a case where the lungs were unaffected; he mentioned the case while examining the chest of a young man; he had quite a profuse hemorrhage, some blood was secured, it contained a little mucus. In it were found a large number of bacilli; again he examined the chest carefully and got no evidence of pulmonary disease. The patient had hemorrhages for three or four days, the blood gave bacilli; there was no expectoration, yet bacilli were found; that was two and a half years ago. Man now seems well. Bacilli may lodge in the bronchi. This may occur without their entering the lung tissue. Tubercle bacilli may get into the lungs through the lymphatics and the blood-vessels. In the bronchi they cause local inflammation. It may be a long time in any case before there are real destructive changes, and when such do occur we get the ordinary symptoms.

Dr. Elksner respectfully begged to differ with Dr. Loomis, he thought that previous tubercular infiltration was possible, and then necrosis of the vessel. The majority of cases do not give us the presence of tubercle bacilli. Even in miliary cases you have great difficulty in making a diagnosis between phthisis and typhoid fever.

Dr. Loomis, in reply, said that if a patient has symptoms of bronchitis, no bacilli will be got. He would hesitate to pronounce a case one of tuberculosis unless the sputum gave bacilli. He was not criticising the views of others; merely relating an experience in his practice.

Dr. Glasgow deemed creosote very valuable. He had not noticed any kidney effect. He gave from two to seventy minims a day, depending on the patient; one minim seemed to poison some. The creosote he placed in a little whiskey, and that was mixed with milk and cream. He got striking results in cases of bronchial phthisis and in alveolar phthisis. Creosote does not have any effect on the bacilli, but he thought that it has an effect on the poisons they generate. He also believed in the good result of inhaling the vapor of creosote at night.

Dr. Curtain closed the discussion, and expressed his satisfaction with the many views elicited.

State Prevention of Phthisis.—Dr. Frederick I. Knight, of Boston, read a paper entitled "Shall Anything be Done by Legal Authority to Prevent the Spread of Tuberculosis?" Twelve years since the real nature of tuberculosis was made public, but little seems to have been done to cope with the disease to prevent its spread. He reviewed the methods recommended by various boards of health, referring to the action of the Pan-American Medical Congress of 1893, the American Public Health Association of 1893, and their action. The method adopted by the New York Board of Health of February, 1894, was deemed an advance. Its manifesto he read *in extenso*. In his State, Massachusetts, he deemed the time right for its practice. The Board of Health in Massachusetts had issued a bulletin and a leaflet covering the ground. The dangers now so well known he reviewed. Danger of sputa-infected cattle and milk.

Dr. Bowditch, of Boston, fully concurred in the views held by Dr. Knight. He said that we want boards of health to take the happy medium between two extremes. The poorer classes should be under the observation of such boards, the better classes have their physicians.

Dr. Von Ruck referred to the results at the Loomis Laboratory, New York City. Also to Tissini's work. Out of fifty six autopsies made by him in ten or twelve death was due to accident. In them tubercle bacilli were found in the bronchi. He referred to the disease-resisting power of men who ward off phthisis and other diseases when well—as in the cases mentioned, had warded off phthisis; but where the *vis medicatrix naturæ* is lowered by typhoid fever or influenza, in such phthisis finds a foothold. He fully concurred in the views expressed by Dr. Loomis as to bacilli being present where there were no evidences of pulmonary disease.

Dr. John Winters Brannan, of New York, referred to several years' work in New York City on this theme. The timely action of the State Board of Health of Michigan pleased him. Its literature used the proper terms. He said that tuberculosis was not contagious in the old sense of the word. The Michigan Board of Health had been very happy and wise in stating that it was "a communicable disease." The New York Board was prepared to use the word "contagious disease," but, adopting the wise course of Michigan, used the word "communicable," instead. Tuberculosis is a communicable disease.

He referred to the excellent work done by the Board of Health of New York in dealing with diphtheria. The Board assisted New York physicians, and by its judicious action had the warm sympathy and countenance of New York practitioners.

Dr. Wolcott, of Boston, endorsed Dr. Knight's views, and deemed the New York method good, an advance in the right direction.

Dr. Andrew H. Smith fully endorsed Dr. Knight's statements and views. He was in favor of securing the end sought—protection—with as little friction as possible.

Dr. Knight closed the discussion. He was very much pleased that so large and influential a meeting endorsed his views. He offered the following resolution, to be submitted to the Congress the following day:

"*Whereas*, The American Climatological Association was founded, among other objects, to promote the study of the nature and treatment of diseases of the respiratory organs; and

"*Whereas*, Tuberculosis is the most fatal cause of such diseases; and

"*Whereas*, Modern research has placed this disease among the infectious, and hence, to some extent at least, among the preventable diseases;

"*Resolved*, That this Association do strongly recommend all boards of health of this country to adopt means tending to the restriction of the disease."

THIRD DAY, THURSDAY, MAY 31ST.

DR. ISAAC HALL PLATT, PRESIDENT, IN THE CHAIR.

The Condition of the Heart in Diabetes, and its Relation to Diabetic Coma.—DR. LEONARD WEBER, of New York, read a paper with this title, which was based upon a study of sixty cases in his practice. The majority of the patients were over forty five, and most of them were women. He reported two cases in children—one case in a child aged twelve, due to scarlatina, death occurred three months later. Another case in a child following a large use of potassium bromide. In cases after middle life there were no recoveries. The duration of the disease was from three to twenty years

A complication of renal disease renders the cases more difficult. The condition of the heart must then be watched. There are cases where the heart is weary, overworked. Such cases are often associated with arterial sclerosis. The acetone odor can be noticed in the breath, marked in many cases. First syncope, followed by speedy cardiac failure. Heart disease is not so rare in these cases. The speaker cited a case of a lady aged seventy-three, recently dead. She had had the disease thirteen years. Three years ago it showed itself in weakness of the pulse—beats twenty-four to thirty, perfect bradycardia. Death was easy and painless. Her husband, a broker, aged seventy-two, developed diabetes. Lived two years.

Diabetes may be a cause of neuro-muscular disease, fatty degeneration of the heart, etc. Doubtless, the poisonous action of ptomaïnes has an important influence. Gastro-intestinal symptoms and marked dyspepsia are well known in connection with diabetes and chronic interstitial nephritis. To repeat, the heart must be watched in all cases of diabetes. The diet in such cases requires careful study.

Diabetes is more often a disease of the whole system than any special organ. Brain and heart disease, and locomotor ataxia may be found as complications.

DR. STEVEN MACKENZIE, of London, reported eighty cases; forty-five died suddenly. In the profession there is an increasing opposition to an exclusive meat diet. Adapt the therapeutic requirements to individual cases. Study all cases on their individual indications; obtain from the patient a minute history of the case. Get also full life history. There are no fixed rules for treatment. No absolute meat diet; rest and massage; try to get rid of the sugar; try the usual alkaline treatment; if soda solutions do not agree he gives opium in some cases; watches its effect on heart and stomach. Schlott's method is valuable.

In cases of diabetic coma he deemed it most important to evacuate the bowels. Then fill the lower colon with alkaline water. So far he has seen no case recover.

Chronic Heart Disease Treated by the Schott Method of Baths and Gymnastics.—DR. ROBERT H. BABCOCK, of Chicago, read a paper with this title. The baths owe their efficacy to saline and alkaline constituents, and also to their warm temperature. Warm baths, in such cases, as a rule, are debilitating. Temperature should be 92° to 93° F., gradually reduced to 87° F. They feel warm at 92° F; often chilly at 87° F. The duration of the bath is limited, one bath a day. They are omitted every fourth day. They are given during six months. After each bath the patients rest an hour, to rest the heart. Pulse is lower during the bath. Under the baths there is improvement in the rate and quality of the pulse. Sphygmographic tracings show the marked improvement in the cardiac currents. Baths lessen the rapidity and decrease the force of the heart's action.

The baths act by causing contraction of the cutaneous vessels. A cold bath is followed by a slower and stronger pulse, and by dilatation of the internal vessels. The *modus operandi* of the baths may be described as follows: First, patient may experience a sensation of chilliness, followed by warmth, due to the gentle stimulation of the cutaneous nerves caused by the salines in the bath. The bath is an aid to the heart. Baths slow and strengthen cardiac contractions. Light exercises, gymnastic movements of flexion and extension of the trunk—a skilled attendant directs them. All exercise within fatigue. No exercise is permitted that embarrasses respiration. Call a halt when there is any evidence of dyspnœa. The exercise acts on the heart and circulation in much the same way as the baths. Gymnastics slow the rate and increase the volume of the pulse. A sensation of comfort follows the bathing. Exercise improves the arterial circulation. Cases so treated receive permanent amelioration.

DR. BABCOCK reported 19 cases treated by him. Nine males, 10 females. He deems the treatment very risky in cases of aneurism and arterial sclerosis. Schott does not deem chronic interstitial nephritis as contraindicating the treatment.

DR. ROLAND G. CURTIN, of Philadelphia, referred to cases in the Philadelphia Hospital where there was temporary diabetes or saccharine urine. It was not a serious symptom and disappeared. They appeared last fall.

DR. GLENTWORTH R. BUTLER, of Brooklyn, said that the disease known as diabetes was but a symptom of some underlying condition. It may be caused by some lesion of the liver or pancreas, or the result of one of the numerous processes of metabolism. Glycosuria is the symptom. There are weak hearts in such cases. General muscular weakness in that disease, and the heart participates; degeneration of the muscular fibres of the heart. Cited a case in his practice. Man aged fifty-five. Urine showed a small percentage of sugar—one tenth of one per cent. Coma came on without any warning. Two months ago had an attack of syncope, an examination revealed dilatation of the heart. Under treatment the heart improved. Man did well, except an attack of syncope of very brief duration, brought on by over-exertion. Regarding diet in diabetes, he accepts no fixed rules. The general condition of such patients is impaired. He does not believe in cutting off all the carbohydrates and saccharine substances at once. He mentioned a case of a pregnant woman. Found lactose in the urine. It was due to irritation of the nervous system. She improved under treatment and the symptoms disappeared.

DR. CHARLES E. QUIMBY, of New York, referred to the defect in all our to day methods in treating cardiac disease. Arterial extension must be present if we are to have good circulation. In aortic regurgitant disease there is a slowing in the circulation. He thought that the indications, in the treatment of valvular lesions, was to hasten circulation and keep up the nutrition of the body.

A New and Distinguishing Sign of Latent Aneurism of the Aorta.—DR. GLASGOW, of St. Louis, Mo., said that in most cases of aneurism, early in their history there was an utter absence of dulness on percussion. That at a later period only were physical signs manifest. Then pressure symptoms, etc., gave a suspicion of the disease. He said that his new sign in thoracic aneurism is the presence of a systolic sound in the brachials—due to vibration of their walls; that it was synchronous with the systole of the heart. It is practised by having the patient extend the arm at a right angle from the body, and by placing the ear over the brachial. The vibrating sound got by the ear he designates as his new sign of aortic aneurism. He finds no mention of such a sound in the older English, French, or German classics on heart-disease and aneurism. He gave reports on five cases in his practice.

DR. MURRAY, of Washington, presented a patient whom he regarded as a "suspect." The man was a negro, aged twenty-six. Pulse, irregular; pain in the left side; pain in shoulder to wrist left side; right side, a small area of dulness; no cardiac murmur; heart apparently normal. He suspected aneurism. Dr. Glasgow had called on him; he practised Dr. Glasgow's pathognomonic sign, and found the brachial systolic sound.

Dr. Curtin, of Philadelphia, had been working in much the same direction—an earlier means for discovering aneurism. He thinks that digitalis increases the force of the heart and increases the aneurism. Had been experimenting on the effects of pressure on the chest-walls, with a view to an easier location of aneurism. Had reduced chest circumference an inch and a half; described a method of bending forward to facilitate feeling an aneurism through the supra-sternal fossa.

Ozone in Phthisis.—Dr. Charles E. Quimby, of New York City, read a paper entitled, "Ozone in Phthisis, with special reference to the Pneumatic Cabinet."

Reviewing the medical history of phthisis, tubercle bacilli, and medical agents, he said that the use of creosote may be due to the lingering belief that it acts as a germicide. Since he had made a systematic study of the disease, he wished to attack it through the systemic forces. He referred to recurrent tubercular and septic influences. For a year past his agents in treatment had been three, alcohol, creosote, and oil of cloves.

Mention was made of an apparatus devised by him fulfilling all requirements. His plans were available to anyone interested in the matter. Next he dwelt at length on the powerful oxydizing properties of ozone. It was described as stimulant. Reviewing the pathology of phthisis he said that a large number of cases were adynamic in character—a fact duly recognized by Koch. In the disease there was a degeneration and necrotic activity.

The use of the pneumatic cabinet and ozone was described. The treatment was applicable in any stage of the disease. He reported a number of cases benefited by the treatment. He makes no claim that they are cured; changes noted are due to local stimulation. Ozone is a powerful stimulant to the mucous membranes. It is a pulmonary antiseptic, an agent of known value. He does not know of any remedy that will destroy tubercle bacilli in the tissues. Effects of ozone on tubercle bacilli in sputa are nil.

The ozone treatment gives a prompt reduction in temperature. It gives a result quite equivalent of climatic influences. The value of an ozonized atmosphere in phthisis is marked. Some patients cannot take iron without headache. Several of this kind after the treatment have been able to assimilate iron. In some cases under cabinet treatment the area of respiration is restored. Believes that ozone meets the demands of the system, called it a respiratory food. It can be generated in houses.

Tuberculosis in Domestic Pets.—Professor Fröhner, of the Berlin Veterinary School, has recently made some investigations as to the prevalence of tuberculosis among small domestic animals, the results of which are as important as they are interesting. In the clinic for small animals during the last seven years, out of a total number of 70,000, only 281, or 0.4 per cent., have been found to be suffering from tuberculosis. The proportion of tuberculous dogs was as low as 0.04 per cent.; cats seem to be considerably more subject to the disease, the proportion of tuberculosis among them being one per cent. The animals most severely affected are parrots, the ratio of tuberculosis among them being twenty-five per cent., no doubt owing to imperfect acclimatization. Living as these birds mostly do in rooms constantly used by members of the family, their liability to tuberculosis makes them somewhat dangerous pets.—*British Medical Journal.*

Ascites and Resignation.—Dr. Kelley, writing in the *Cleveland Medical Gazette*, says that he recently saw a tombstone in the Bunhill Fields burying-ground, London, upon one side of which was the usual inscription of name, age, and date of death, while upon the other side was carved a clinical history reading as follows:

> In 67 months she was tap'd 66 times
> Had taken away 240 gallons of water
> Without ever repining at her case
> Or ever fearing the operation.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

ROYAL MEDICAL AND CHIRURGICAL SOCIETY—CARDIAC SEQUELÆ OF INFLUENZA—PAIN IN REGION OF HEART—ACCELERATION OF BEATS—A CASE OF ACANTHOSIS NIGRICANS—SIR GEORGE HUMPHREY, F.R.S.—HEALTHY LONDON—PREVALENCE OF SMALL POX—EXTENSION IN THE PROVINCES—THE LEICESTER CRAZE—THE LOCAL PRESS—DEATHS OF PROFESSOR JOHN CLAY, W. L. UNDERHILL, DAVID TAYLOR, PROCTOR S. HUTCHINSON

London, June 20, 1894.

The concluding meeting of the Royal Medical and Chirurgical Society was held on the 12th inst, when Dr. Sansom read a paper on tachycardia and cardiac pain after influenza. He had met with 100 cases in which cardiac disturbances had followed influenza at more or less distant intervals. Of these there were 23 of pain, and 37 of tachycardia; 25 irregularity (arhythmia); 5 of bradycardia, and 10 of organic disease. The present communication dealt with the first two sections of cases. The pain experienced in the region of the heart was in some cases paroxysmal and in some resembled angina; in others it was more or less protracted. It might be intense and sudden, so that some patients fell completely unconscious. In some unconsciousness occurred paroxysmally in the absence of severe pain. There were not the associated signs of true angina pectoris. Hysteria was excluded, for several patients were men, and some typical athletes, who had been in perfect health until their attack of influenza. In the cases manifesting more constant pain the beating of the heart was often accompanied by subjective discomfort; there were sometimes tender spots in the intercostal spaces close to the sternum, with more deeply seated pain in defined situations, and in several instances symptoms of concomitant neuritis involving some of the nerves proceeding from the brachial plexus. He attributed the symptoms to a neuritis affecting some of the ganglia of the cardiac plexuses, or to a disturbance of the sensorium analogous to that in epileptiform neuralgia or in visceral neuralgia. Quinine in five grain doses, with antispasmodics, morphia sparingly and cautiously administered subcutaneously, and a course of the bromides and iodides with arsenic were recommended. Good results might follow the use of a weak continuous galvanic current from the nape of the neck to the region of the vagus. Next, as to the cases of tachycardia following influenza. It might occur immediately after the attack or after several months, and continue for long periods—at least eighteen months. In many cases the heart was very irritable, quickened action being provoked by very slight causes or occurring at intervals without assignable cause. It might be accompanied by many, or even by all, the signs of Graves's disease—a circumstance which was of interest in the question of pathology of the latter affection. The most probable initial cause was a disturbance of the vagus at its origin or in some parts of its course, whereby its controlling power over the cardiac contractions became impaired; possibly irritative lesions of the accelerator nerves of the heart, in the cord, in the course of the sympathetic filaments, or in the ganglia, might be concurring causes, and in some cases hypersecretion by the thyroid might be a subsidiary cause. In the treatment of post-influenzal tachycardia drugs seemed to be inefficacious except as modifying the associated symptoms, but the systematic use of weak continuous galvanic currents from the nape of the neck to the region of the vagus might be followed by good results.

Dr. Althaus remarked that hysteria was met with in a considerable number of men. In addition to the treatment which had been adopted, he had employed salicylate of soda with much benefit in the early stages, while later a combination of phenacetin and caffein gave ad-

mirable results. The continuous galvanic current was useful, a good effect being obtained by one milliampère. As to the cause of the tachycardia, though there might be in some a peripheral neuritis of the vagus, he thought that the cardiac and vasomotor centres in the bulb were more at fault. He had never seen vomiting in these cases, though it ought to be common in peripheral neuritis of the vagus He had seen polyuria, glycosuria, and albuminuria all follow influenza, and this latter suggested the medulla oblongata as the seat of the lesion. As to the pathology of Graves's disease, some French observers had considered it to be a neurosis which left no anatomical evidence in the nervous system, while German physicians had attributed it to perverted nutrition of the thyroid body. He himself had regarded it as an organic disease of the medulla oblongata, and he rested his conclusions on both clinical and experimental grounds. It had been shown in animals that if the restiform bodies were injured the symptoms of Graves's disease would be produced, and the results of necropsies on the human subject had revealed degenerations in different parts of the medulla. He had never seen an instance of complete recovery from Graves's disease, the mortality from which was very considerable, even as high as fifty per cent., and in some who died very suddenly the cause appeared to be a failure of the cardiac centre in the medulla. Mr. Spencer Watson asked Dr. Sansom what were the signs by which it was possible to distinguish tachycardia and heart pains due to influenza from those due to other causes; and whether any group of cardiac symptoms consecutive to epidemics of influenza had not before been seen in association with other diseases. In reply to this and questions by other speakers, Dr. Sansom said, the chain of evidence between influenza and the sequelæ seemed to be complete in his cases, and he had never observed a similar grouping of symptoms without a previous attack of influenza. He agreed that salicylate of soda was good in the early stages and in the pyrexial period, but he had been chary of pushing it on account of the liability of its producing toxic effects. Phenacetin and caffein he had found very valuable. As to the question of absolute recovery from Graves's disease, he had seen some very bad cases get absolutely well, except for an occasional outburst of emotional disturbance to which so many women were liable. As regarded the urine, he had noticed exceptionally large quantities of nitrogenous products excreted, and sometimes albuminuria. He had never seen glycosuria in post influenzal tachycardia, though he had met with it in Graves's disease. Although he had never seen a typical case of spasmodic asthma due to influenza, yet he had seen several cases of marked dyspnœa of a peculiar character often spoken of as "tachypnœa." There seemed to be a general consensus of opinion that the symptoms noted were due to changes in the central nervous system, and these changes might, he suggested, be minute hemorrhages. If these hemorrhages occurred in a region which impaired the function of the vagus, then tachycardia would result; but if they occurred lower down, bradycardia and cardiac irregularity would be produced.

At this meeting Mr. Morris showed a single woman, aged thirty-five, suffering from widely disseminated discoloration of the skin, with diffuse warty growths in various parts, which he submitted as an example of the disease called by Unna "Acanthosis nigricans." Only two similar cases had been recorded (Politzer, Janovsky). Nothing was known as to its pathology. Dr. Eddowes produced some sections taken from Politzer's case. A great deal of discoloration appeared to be due to dirt, as was the case in ichthyosis. He suggested that there was a close connection between this condition and seborrhœic eczema.

LONDON, June 30, 1894.

Sir George Humphrey has been so ill as to give considerable anxiety to his numerous friends. At his best he is not very strong, and has suffered several attacks of illness. This time a severe abdominal attack has laid him aside, and phlebitis, from which he had previously suffered, reappeared. I am glad to be able to report that during the week convalescence seems to have set in steadily. Everyone is wishing him complete recovery.

Although we make such frequent complaints of insanitary conditions and preventable diseases, it is not to be supposed that Londoners are exposed to greater dangers than other citizens. In fact, not a few of us have long been satisfied that we live in the healthiest city in the world, and our boast to this effect is just now supported by official mortality records. For a month past London mortality has been at the rate of only 16.3 per 1,000, while in Paris it has been 20.5, in Berlin 18.2, and Vienna 22.5. Even you in New York have been considerably above us, although below Paris and Vienna.

We are, however, by no means free from zymotic diseases, and the continued prevalence of small-pox is most unsatisfactory. There were fewer admissions last week to the hospitals. Still there remained 170 cases under treatment. This is 21 less than the previous week, and with fewer fresh cases reported we may anticipate a decline. But a more serious circumstance is the diffusion of this disease in the provinces. A great number of towns have now contributed their quota to the records, and although in most of them the outbreaks have been localized, the necessity of looking to our armor has been made manifest to all but the most perverse faddists. Of these Leicester has for some time been the head-quarters. In that town the local authorities have boasted of a "system" of their own and rejected vaccination. They have not, however, escaped an epidemic, and the last report of the medical officer of health for the town is a most instructive document. Its influence is, unfortunately, likely to be lessened by the determined opposition of the anti-vaccination faction, led by Mr. Biggs, a town-councillor, and a member of the sanitary committee, who seems to fancy this office qualifies him to pass judgment on medical questions; for he has not hesitated to enter into controversy with the medical officer of health and to criticise his actions with no little acerbity. Moreover, this same oracle has ventured to call in question the treatment of cases in the hospital. Such inflated self-assurance should open the eyes of his fellow-townsmen to the absurdity of being led by one whose vanity is his chief qualification for setting up his private prejudice against the views of a profession of which he has not acquired the most elementary lessons.

But a sadder spectacle than that of the self opinionated town councillor is the attitude of the local press, which has lent its influence to what I suppose it imagines to be the popular view, for it is difficult to believe that the staff of a daily paper should be completely blinded by the faddists. Statistics are thrown about in a manner that would make the real statistician aghast, and which tend to encourage the notion that "anything may be proved by figures." I have friends at Leicester who are intelligent, but the faddists at present are in the majority. There may be a rude awakening for them yet. Of course for the time the town enjoys the protection afforded by the vaccination of the adult population before the present craze existed. When mothers learn how their infants have been sacrificed to this craze there may be a wailing which the most infatuated faddists may regret to have had any share in producing.

Death, ever busy in our ranks cutting down both young and old, often gives occasion to sad notices from my pen. John Clay, of Birmingham, has passed away after a short illness, aged seventy-three. Your readers will remember how some years ago he thought he had found a remedy for some forms of cancer in chian turpentine. But he had done good work as obstetric surgeon to the hospital and professor at the Queen's College. He enjoyed, too, a large practice. On the 23d inst. Mr. W. L. Underhill, of Tipton, was buried in the local cemetery. He had passed a long and active life in the town, reaching the age of eighty. David Taylor, another veteran whose

sons are among us, died on the 16th inst., in his eighty-sixth year.

In contrast with these comes the demise of Proctor, the second son of Mr. Jonathan Hutchinson, who died this week, aged only thirty-one. His health had not been robust, and he had travelled in the colonies and the States before settling down to practice. After doing so he again broke down and gave up his London prospects and went again to Canada. For a time he improved, but eventually returned to spend his last days at home, as many another promising young practitioner has done. *Sic transit.*

THE MEDICAL OPPORTUNITIES OF PARIS.

To the Editor of the Medical Record.

Sir: A medical student, earnestly desiring to do best work in the best place, I was surprised always and often annoyed by the question universally put to me by my fellow-Americans on learning that I was pursuing my medical studies at Paris: "But why do you not do all of that in America."

It was no mere chance which decided me to prepare myself there, but a well-grounded determination after careful inquiry in regard to the advantages of the best medical schools of the United States, Great Britain, Germany, Austria, and France.

The faults of others will not form the subject of this paper, though, after detailing the preparation of a doctor of medicine here, it might subsequently be interesting to draw comparisons between this, other European, and American requirements for a medical degree. The object of this paper is merely to answer the question of my American friends by outlining the work that is required here, and also enumerating the special opportunities offered at Paris for advanced and efficient work in special branches of medical science.

The paper may have a public interest in that public attention should be drawn to the preparation that is given to medical men, the doctors to whom each family intrusts the lives of its members in times of critical illness, and to whose wisdom and efficiency implicit confidence must be given. For this the public is interested that its medical service be adequately prepared and trained.

Do we give proper attention, in the requirements of our medical schools, to insure an attendance and care that vital necessity and a public conscious of its dependence should demand?

Examine the preparatory work of the continental medical student. Study the American school in comparison. Offset the vital and casualty statistics of the two worlds, with due allowance for difference of race and climate. Then come to a conclusion founded upon positive knowledge, and not hearsay evidence or impression.

How is a doctor trained in France? What is the requirement and the signification of the degree "Docteur en Médecine" of the University of Paris?

To commence the courses of the medical school a candidate must be already provided with the degrees of "Bachelier ès Lettres" and "Bachelier ès Sciences." In short, a graduate of the high standard colleges of the United States finds himself admissible to commence his medical studies here.

The courses commence in the early part of October, and continue, with but two weeks' interruption, until the middle of August, ten months. The student follows a full and carefully compiled programme of study for four years, before becoming admissible for his final and severe examinations, three in number, but each divided into several parts. The examinations are grouped as follows. At the end of the first year's work, examinations "in course" of the first year's studies must be passed, viz chemistry, the general science, organic and inorganic, with applications to medicine; physics in like manner; zoölogy, in general, with parasitology, bacteriology, and comparative anatomy; botany, in general, and *materia medica;* histology, general and technical. Twenty months later, or half way through his third year, the student presents himself for examination in general and descriptive anatomy, with practical exercise with the cadaver and subsequent demonstration of his preparation. This is perhaps the most exacting of all examinations, on account of the minutiæ of detail and technique demanded, and covering two years' work in the dissecting rooms.

At the beginning of the fourth year the examination in physiology must be passed, and after the completion of the fourth year come the strictly medical examinations, and here lies the test of four years' work. The student presents himself the fifth October after the commencement of his medical course, for the final and conclusive series of examinations for his degree.

The first of these comprises the subjects of operative surgery, external pathology and obstetrics, with practical demonstrations, before a jury, of surgical operations. After this examination (which is called the first part of the third, lasting several weeks, with delays more or less prolonged according to the need of special preparation) the student undergoes the last part of the examination, this time on the subjects of internal pathology, or pure and general medicine.

Some time later, according to the wish of the student and his readiness in preparation, comes the fourth examination. The subjects are hygiene, legal medicine, materia medica, therapeutics, and pharmacology.

Last of all the fifth examination, and in this one all the force of the student must be called into play. The examination consists of three clinics, one in medicine, another in surgery, and the other in obstetrics, made by the student before an examining jury, selected for each specialty, each member of which designates a patient chosen at the time of examination, giving the candidate ten minutes to examine his case, but no means of book preparation or assistance other than his own knowledge and personal interrogation of the case in question. This examination is an affair of several weeks, and its successful termination lifts a burden from the student's mind. Between him and his medical degree there is now but one step—the thesis.

The thesis must be on a medical subject chosen by the student, and approved by an examining committee. To this subject are brought all results of personal observation and investigation possible for the candidate to gather and digest. Much original work and many valuable counsels of his masters are there expressed in a well-developed solution, the results of medical query and theoretical problems not before determined to scientific satisfaction. The thesis is a matter of at least six months' devoted labor, and it is not rare to find a thesis the result of several years of most exhaustive and thorough study. With the presentation, publishing, and public sustentation of his thesis, our medical man reaches his goal; and, with a hard-earned degree, finishes his student career to commence the public duty for which he is so well qualified.

At Paris one does not study medicine for the "fun of it;" nor to be called, in after life, by the high sounding name of "Doctor." The study costs too dearly for that, and by the bedside, through all those years of service for the sick and poor, one leaves the personal vanity that demands a sounding title. Nothing but earnest determination and fondness for scientific work for a chosen profession gives the courage to continue to the well-merited, but poorly recompensed end of the student's efforts.

In preparation for the examinations the student has recourse to three sources, his books, the instruction given by the medical faculty and the hospital.

For the books little need be said; the masters of all branches of the sciences are at hand, modern, complete, plentiful, varied, and not too expensive.

The medical faculty of Paris belongs to the largest university in the world, and naturally has more students by several hundred, by official statistics of last year,

than any other medical faculty. Consequently the force of instructors is very large. The faculty counts thirty-five professorial chairs which give instruction throughout the entire year. Besides countless laboratory assistants, demonstrators, professor's aids and clinical aids, the force of professors in activity the present year numbers seventy or more.

Practical laboratory work is required for the following subjects: physics, chemistry, zoölogy, botany, histology, physiology, anatomy, pathological anatomy, operative surgery, with short courses in bacteriology, pharmacology, experimental pathology, general pathology, therapeutics, obstetrics, legal medicine, and hygiene.

During the year there are delivered by the professors of the faculty, at least twelve hundred lectures and seven hundred clinics, so divided as to give three lectures a week upon each of the subjects of instruction; but for internal and external pathology, legal medicine and obstetrics, twice that amount, one lecture every day on each subject throughout the school year, is given. The clinical professors each give two clinics per week. They are numbered and assorted as follows: Medical clinics, four professors; surgical, four; obstetrical, two; mental pathology, children's diseases, skin and syphilitic diseases, diseases of the nervous system, ophthalmic and diseases of the urinary organs, each one professorial clinic.

After the books and the faculty, but not the least important, comes the hospital work of the student. For the last two years of his course he is obliged to serve in the hospital two hundred and eighty-four days of each year. Without this regular service he cannot be allowed to continue his medical course. Most of the students do much more than this and follow regularly the hospital work for four years or more.

The students at the hospitals are under the control of the physician in charge of the service, the direct supervision of the chief of the resident service, and subject to the direction of the house physician of the service in which the student is accepted as an aid. In this way a systematized grade of bedside instruction and clinical observation is maintained in all of the hospitals, while, at the same time, the student serving as an aid must do all the practical work himself as fast as he becomes well grounded in its principles.

There are in all twenty six hospitals to which the students have free access and in which they are invited to serve according to their choice. In these hospitals are fifteen thousand beds, always full. The acting surgeons and physicians of this immense organization of hospitals are the best practitioners in France, chosen by competitive examination, in a struggle where success means the only way to establish a living practice at Paris. All of these surgeons and physicians devote to the hospitals the morning of every day in the year, year after year until retired by death or age.

In the hospitals, many clinics and lessons are given in addition to those under the auspices of the faculty and already mentioned.

At present there are given no less than thirty such lessons and clinics each week. Each specialty has its masters and its own hospital service; thus enabling the student, already strong in his general medical education, to choose and pursue to best advantage his chosen specialty.

In addition to all of these advantages is another that is often appreciated. Every student of the faculty of medicine is admitted without charge to all of the courses and laboratories of La Sorbonne—*i. e.* Faculty of Sciences, Collége de France and of the Museum d'Histoire Naturelle. These three institutions give the most advanced courses of science, language, and philosophy.

At the Collége de France during my course were the famous Professors Berthelot and Schützenberger in chemistry; Brown-Séquard in medicine; Balbiani, comparative embryogeny; Ranvier, histology; Ribot, experimental psychology; Renan, the philosopher; Gaston de Paris, the philologist and so through a list of famous names that this paper has not space to enumerate.

At the Museum d' Histoire Naturelle were given the courses of Frémy, Van Tieghem, Émile Blanchard, A. Milne Edwards, DeQuatrefages and others.

The faculty of sciences at the Sorbonne includes the instruction of Poincarré, Javal, Troost, Pellat, Lippman, Friedel, and Wolf, with many others, but less interesting to the student of medical science.

There remains another source of instruction at Paris, the importance of which to the medical student demands something more than a mere mention; the "Institut Pasteur."

The "Institut Pasteur" is a name well known in America. The man whose name it bears, and his marvellous work need no heralding there. But what is not generally known is the fine opportunity offered by the institute for special students in microbiology. The establishment of the Pasteur Institute is wholly in accord with the educational policy of France—the best regardless of cost, but instruction free. In consequence, in this institute, besides the equipment and accommodation for the special end for which it is constituted—the treatment of hydrophobia—there are found six special services for instruction in microbiology.

The first is the hydrophobia treatment, under the charge of Professor Grancher; the second, general microbiology, Professor Duclaux; the third, technique of microbiology, Roux; the fourth, microbiology applied to hygiene, Chamberland; the fifth, morphological microbiology, Metchnikoff; and sixth, comparative microbiology, directed by Gameleïa. These six services, each equipped with its special laboratories and apparatus, comprise about fifty workers.

The first service, treatment of hydrophobia, comprises the work of vaccination of the bitten, by Drs. Charrin and Chantemesse, and all studies relative to the subject of hydrophobia.

In the services of general and morphological microbiology, the chief, if not the only, aim, is to study the form and functional properties of the microbe, in order to know if these functions are constant or little variable and can consequently serve to characterize distinct species; or if, on the contrary, these properties exist in condition of perpetual change, vacillating in limits too large to permit their service for other means than to form their classification in groups.

The variations of form help to determine the classification question, but are not alone sufficient to decide it, even should they be more distinctly defined than is the case. The variation of physiological properties must also be determined. This is done by the difficult study in detail of pure cultures and by means of attentively applied chemical experience to test the physiological action. The chemical side of the question belongs to the service of general microbiology. In this laboratory are employed and tanght all the methods of chemical analysis capable of serving in the study of microbes, their needs of nourishment, methods of culture, and their products of secretion and excretion.

The laboratory of microbiology applied to hygiene, similar to that of general microbiology, includes in its work all that concerns the hygienic study of air. soil, and water, and also the study and preparation of all vaccines. Mark, in passing, that had the lymph of Koch passed through this laboratory, it would, in all probability, not have been amenable to the charge of killing numerous invalids, which is now so forcibly pressed against it.

The two laboratories of comparative and technical microbiology are devoted to the study of diseases of microbic origin, the first as a laboratory of special research, the second for special instruction and training. Into this latter laboratory Dr. Roux receives the entering students in series commencing every six weeks. To them are given the notions and all technical details to render the student competent in questions of microbiology. This practical laboratory technique and study renders the student capa-

ble of entering upon the advanced work and researches of his subject. At the end of his six weeks' training he passes into the other laboratory, chosen for his intended line of work, and where his stay is limited only by his needs and his capacity.

There is a fee of admission, payable once for all, and a monthly tax, according to the expenses of the laboratory, both at a minimum. The animals necessary for experiment are furnished at one-half the market price. The instruction is free; and, more than that, the administrative council exercises the right of remitting all expenses, even for personal experiment, to such workers as may be judged worthy of this remission and thus be enabled to continue their studies without expense.

As will be seen, this institute, aside from its special aim, furnishes instruction of great importance to a medical student interested in this line of work.

With the "Institut Pasteur" closes the list of medical opportunities offered in Paris. For these opportunities my fellow-students from the United States and myself were self-exiled from home, families, and friends for a period of five or six years. For these advantages, we worked with severe determination, resolved to overcome the strangeness of a foreign tongue and endure the isolation of student life in a great and foreign city. Were we mistaken in believing Paris to possess superior advantages, or were our questioners badly informed?

William S. Magill, A.M., M.D.

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Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 21, 1894.

	Cases.	Deaths.
Tuberculosis	52	128
Typhoid fever	14	9
Scarlet fever	45	4
Cerebro-spinal meningitis	0	8
Measles	41	5
Diphtheria	193	41
Small-pox	4	2
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

The Use of Bromide of Ethyl as an Anæsthetic in France.—At a recent meeting of the Société de Chirurgie M. Segond spoke on the different methods of applying anæsthetics and their composition. He said that for the last year all his operations were done under bromide of ethyl alone or inhalations of ethyl followed by that of chloroform. When the operation was of short duration the former anæsthetic sufficed alone, but it was not so when the operation was lengthy, grave, and tedious, such as hysterectomies, laparotomies, etc. No accident had ever been witnessed out of the four hundred and forty-three cases. He always administered the anæsthetic to the patient in the dorsal decubitus, and where the bromide of ethyl alone was used he poured at first a few drops on a compress and presented it to the patient, in order to accustom him as it were to the odor of the liquid, after which a large dose was thrown on the fold, which was pressed firmly over the mouth so as to prevent all communication with the free air. In twenty seconds resolution was complete and the period of excitement was frequently wanting. Where the effect of an anæsthetic had to be kept up for some considerable time a few drops of chloroform were applied from time to time. M. Bazy said that he had tried bromide of ethyl in a certain number of cases and found it satisfactory. M. Monod gave similar testimony to the merits of bromide of ethyl, but said that at the first moments of the inhalation the patient was seized with such a terrible sensation of anguish and suffocation that the speaker preferred without hesitation using chloroform. M. Berger and several other members expressed themselves in the same sense.—*Medical Press.*

Otic Gymnastics as a Cure for Deafness.—Professor Urbantschitsch, of Vienna, has again brought his reputed new method of treatment before the Vienna Medical Society in the form of a lecture (*Medical Press*). This consists of selecting different sounds which are regularly produced at the ear of the deaf until he becomes familiar with them. The sounds should be continued five to ten minutes daily, or at least three times a week. This treatment is reputed to act like magic on the young, but is slower in operation in the aged. Much depends upon the voice, however, in awakening the perceptive power, as the high and deep tones are not equal in effect. The intervals must be filled in gradually with inter-tones. If a correct record be kept during the treatment, the right ear will probably differ from the left during the period. After the perception of speech, musical tones should be practised. Urbantschitsch has constructed a harmonica with five and a half octaves, which answers this training admirably. As to the time this treatment must be continued, no limit is fixed, different cases requiring different durations before reaction sets in. Total deafness being rare, it is considered that this treatment must affect a large number of the two hundred thousand alleged, by statistics, to be helplessly deaf in Europe. Another difficulty he pointed out in educating these unhappy patients was the mental condition. In many of these cases the mind is weak, intelligence low, and education difficult to impart even in healthy ears, hence we find children making rapid progress under treatment. The practical worth of this treatment is often questioned if it be worth the trouble, but from a mere social point there is only one answer. Since commencing his treatment in "The Landesanstalt" sixty cases have been regularly under treatment. At the beginning of the course not one could hear a sentence, six of them could hear a word, twenty-two could perceive vocal sounds, while thirty-two had a trace of hearing. To day twelve could follow sentences, sixteen words, twenty-one vocal sounds, and eleven a trace of hearing. Professor Gruber agreed with Urbantschitsch in the training of the young, but considered the time far too limited to pass a definite opinion. He recollected visiting the Israelitish deaf institution thirty years ago, where the director practised this treatment with vocal sounds, and could recall many cases of children rapidly improving. Toynbee and Hinton, in their "Handbook of Aural Disease," record many favorable results by these otitic gymnastics. He also related the case of several families who have quite recovered by this slow treatment. Professor Politzer agreed with much that had been said by Urbantschitsch, but was not so sanguine of the future results. The treatment was not new, and therefore had a longer trial both in Germany and France.

Physician to the Household of the Ameer.—Dr. Lilias Hamilton has recently gone to Kabul to serve as physician to the harem of Abdurrahman, the Ameer of Afghanistan. She is to have a personal guard of six soldiers, three of whom will accompany her whenever she ventures out upon the streets of the city. The Indian Government has sought to dissuade the young lady from what it considers her venturesome undertaking, and has warned her that she goes at her own risk, and that it disclaims all responsibility for whatever of an unpleasant nature may befall her.

Purification of Water.—Alum has been regarded as one of the best means of purifying water, but Teich has found that it has no effect upon typhoid bacilli, and that cholera germs are destroyed only after the water has been treated with alum for at least twenty four hours.

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Original Articles.

THE ETIOLOGY OF THE DEFORMITIES OCCURRING IN KNEE JOINT DISEASE.

BY A. M. PHELPS, M.D.,

NEW YORK.

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Propositions.—1. In diseases of the condyles of the femur or the head of the tibia the leg always assumes a flexed position to a greater or less extent. 2. After the limb flexes the foot rotates outward, and rotation increases with flexion. 3. In diseases *confined* to the patella the limb never flexes. 4. In disease of the synovial sac, or fibrous capsule, *anteriorly*, unattended with diseases of the condyles, cartilage, lateral, or crucial ligaments, the limb remains straight.

In diseases of the entire joint, including the cartilages, the leg always flexes, whether there is fluid present or not.

I must qualify these propositions by saying that certain pathological changes which may have taken place, may modify these deformities. But such exceptional deformities are always easily accounted for, as, for instance, that seen in Charcot's disease, or in cases attended by complete destruction of either condyle or either side of the tibia. My observations have been made in a large number of cases upon which I have operated in the Post Graduate and City Hospitals, New York City, and the Mary Fletcher Hospital, Burlington, Vt., and I found that the foregoing propositions were correct, with an occasional exception, as already noted.

Many German and English experimenters have tried to account for flexion upon the fluid hypothesis. It is true that when the knee joint is forcibly injected it will flex slightly, to give the greatest possible capacity to the capsule, but this is insufficient to explain the deformities.

Barwell does not attempt to explain them, but says (Barwell, p. 106, Wood's Library, 1881), "It is true that the flexors are probably in all limbs stronger than extensors, but in fact a mere examination will show that on the flexor side muscles are rigid, and on the opposite side flaccid. Our knowledge is as yet insufficient to account for this phenomenon."

The fluid hypothesis is wrong, why?

1. Because by far the largest per cent. of knee-joint diseases are unattended by fluid effusions. Still the same picture of deformity is seen as in those cases attended by large effusions.

2. Cases of disease, extra-capsular, located in the epiphysis of the femur, or in the head of the tibia, in which the joint was not found involved at the time of aspiration, presented the same picture of deformity.

3. Large serous effusions, from synovitis or other causes, are frequently unattended with flexion.

4. After the joint is evacuated in large effusions, the limb should again assume the straight position, but it does not.

These are the chief and valid reasons why the fluid hypothesis is incorrect.

The statement of Barwell just quoted, is incorrect. I have carefully weighed the muscles acting upon the leg, and find that the flexors weigh eight pounds and the extensors fourteen pounds in the subject examined. The quality of fibre of these muscles being equal, and other things taken into consideration, the extensors would be stronger than the flexors, in the proportion of fourteen to eight, while the limb is in the straight position, as neither group would have the advantage of leverage.

Experiments to Demonstrate the Relative Strength of Each Group.—EXPERIMENT I.—A man was strapped to a table, the popliteal space at the end of the table and leg extending over. He could sustain 136 pounds suspended from his foot. Turned on his face, the patella at the edge of the table and limb extended, he could now only sustain 36 pounds suspended from the heel.

These results correspond very closely to similar ones attained by Haughton, of Dublin. (See Haughton's "Animal Mechanics.")

EXPERIMENT II.—Subject standing, right leg flexed to right angle, he could hold suspended from heel 90 pounds. In other words, the flexor group were 55 pounds stronger when the leg was flexed than when straight.

EXPERIMENT III.—Subjects standing against bar, which crossed the legs at right angles behind at the popliteal spaces, the left toe of foot against a spike in the floor to prevent slipping. A strap around ankle of left leg adjusted to spring scales, which were pulled upon from behind, showed a resistance of the extensor group of muscles of 240 pounds.

Same subject was strapped on his back, leg hanging at right angles over the edge of the table. The same scales were now pulled upon under the table, and it was found that a pull of 80 pounds would flex the leg still further, a difference of 150 pounds of resistance in the quadriceps group of muscles between the leg flexed and extended. Then we have this formula for extensor and flexor group:

1. Flexors, first experiment, 35 pounds. Extensors, same experiment, 136 pounds. Difference of power of each operating with equal advantage, equal 90 pounds.

2. Flexors, same experiment, leg flexed, greatest advantage of flexors, 90 pounds. Extensors, leg straight, greatest possible advantage for extensors, equal 240 pounds. Experiment III. Difference, equal 150 pounds.

Difference in favor of flexor, limb straight or flexed, 55 pounds.

Difference in power of extensors, limb flexed or straight, 150 pounds. This proves that the extensors are stronger than the flexors, the proportion being 240 to 90, the limb being straight to give extensors the greatest advantage, and flexed to give the flexors a similar advantage. The limb when flexed, so modifies the strength of these groups as to make the proportion in favor of the flexors as 90 is to 80

The extensors lose in power as the limb flexes, while the flexors increase in power in about the same proportion. We all remember the futile effort of one boy to bend the other's leg by putting his knee in the popliteal space, and grasping the foot, the other boy on his face. And again, sitting on a fence while hunting, the toes under or behind a rail, one can easily lower himself backward until the head is on the ground, and can quite easily again resume the upright position. The power exerted by the quadriceps group of muscles in such a case, acting as a pulley over the end of the femur, raising a weight of 150 pounds on the end of a lever (the femora) of nearly two feet, must be enormous, amounting to hundreds of pounds.

We will now examine a knee-joint. It is a hinge

which, when in the straight position, is firmly fixed, owing to the tension of the lateral and crucial ligaments. This forces the articular surfaces firmly together and prevents lateral motion. The leg flexed, there is lateral

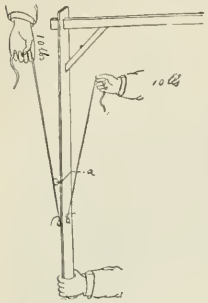

Fig. 1.

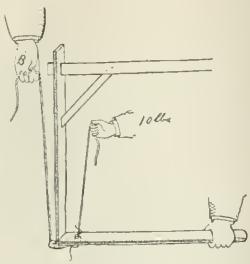

Fig. 2.

motion of the joint, which increases as the leg flexes, and not only lateral but rotary motion. This is due to the relaxation of the crucial and lateral ligaments by flexion. Another fact: the patella, and a portion of the capsular,

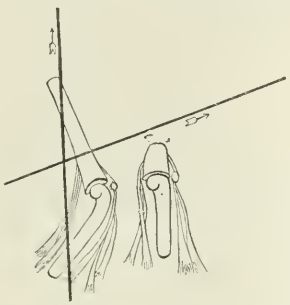

Fig. 3.

anteriorly receives its nerve-supply from the obturator, and possibly from the anterior crural. The other portion of the joint is supplied from the great sciatic. The great sciatic supplies the flexor group, while the obturator and anterior crural supply the extensor group. A clinical fact is, that when the entire joint is attacked with acute inflammation, all the muscles surrounding it are affected by spasm. Still flexion rapidly takes place, whereas disease of the condyles always produces great spasm and rapid atrophy of the flexors, while the extensors remain quiescent. Diseases limited to the patella produce spasm and atrophy of the quadriceps extensor femoris, and the limb remains straight.

Fig. 4.

Understanding that the extensors are stronger than the flexors; that the muscles about the joint are equally affected by spasm when the entire joint is diseased, why does not the leg remain straight? Before attempting to answer the question, I desire to call your attention to these diagrams. Fig. 1, a lever with a joint at *a*. Both hands pulling ten pounds, the bar would not flex. But the bar being flexed at right angle puts one string on the lever and the other around the pulley (Fig. 2). This gives to the string acting on the lever a tremendous advantage, quite easily calculated. This is exactly what takes place when the leg flexes, and explains the difference in power as illustrated by my experiments. The same mechanics applies to the anatomy of the leg, roughly represented by a rude pencilling (Fig. 3). A photograph of one of my dissections (Fig. 4) shows the biceps acting on the head of the fibula, the limb straight, and also the extensors and patella. When this leg is flexed the biceps is seen to act on a lever, and the extensors over a pulley (head of the femur). The muscles being dried, do not give an accurate idea of their position while contracted, as they fall in curves on flexion. Fig. 5. The same leg straight, showing inside flexors acting on the tibia. Fig. 6. The same leg flexed. It will be seen that these flexors increase in power as the leg flexes, by being placed on a lever, and the extensors decrease by being wound around the head of the femur.

Q. Why does the leg flex when the entire joint is diseased, and all muscles are equally affected by spasm?

A. When the leg is straight the tension upon the lateral and crucial ligaments produces great pressure between the articular cartilage. This produces great pain, and the patient to relieve this flexes the leg to relax these ligaments. This at once relieves intra articular pressure. But the flexion of the leg has put the flexors on a lever and the extensors on a pulley. The flexion now having the advantage, will continue to flex the leg.

Fig. 5.

Q. Why does the leg rotate outward?

A. Flexion, by relaxing the lateral and crucial ligaments, permits free lateral and rotary motions at the knee joint. The biceps inserted into the head of the fibula, and being the stronger of all the flexor group, and having the advantages of direction and leverage, rotates the leg outward.

Q. Why does the leg never flex in diseases of the patella alone?

A. Because the reflexes from the area of disease are transmitted through the obturator and anterior crural nerves, which supply only the quadriceps. A voluntary effort to relieve pain is also present.

Q. Why are the extensors relaxed in disease confined to the head of the tibia and condyles of the femur posteriorly?

A. The reflexes from the area of disease are transmitted through the great sciatic, which nerve supplies the flexors. Exceptional deformities are produced from pathological destruction of bone or soft parts.

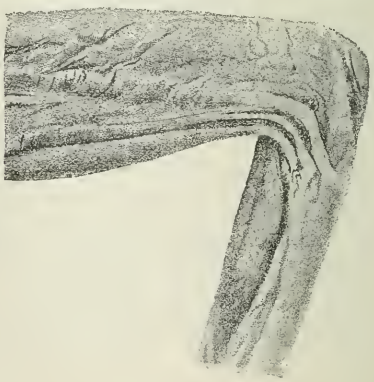

Fig. 6.

Conclusions.—Typical deformities are produced by change of leverage and action of muscles due to:

1. A voluntary effort to relieve pressure and pain.
2. Involuntary spasm and contraction of muscles, which increases the deformity by advantage of leverage due to flexion.
3. Nervous irritation of groups of muscles due to localized lesion in or about the joint.
4. Exceptional deformities are produced by pathological destruction of bone or soft parts.
5. Outward rotation of the leg is produced by spasmodic contraction of the biceps after flexion has taken place. Flexion allows lateral and rotary motion at the joint.

GENIUS AND DEGENERATION.

By JAMES WEIR, Jr., M.D.,
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That the psychical function or intellectuality is frequently developed at the expense of the physical organism is well known, and that genius is seldom or never unaccompanied by physical and mental degeneration is a fact that can no longer be denied. I use the word degeneration in its broadest sense, and intend it to include all kinds of abnormalities. The facts noted above are by no means recent knowledge, but were vaguely recognized and commented on centuries and decades of centuries ago by the Hebrews and kindred races of people. The Hebrew word *nabi* means either madman or prophet, and it is now admitted that most of the prophets gave evidences of insanity as well as genius. The Greeks and the Romans recognized this kinship, and we read in the Bible of a certain Festus who, when confronted by a man of genius and being unable to answer his arguments, said to him, "Paul, much learning hath made thee mad!" Lauvergne, when speaking of the oxycephalic (sugar loaf) skull, an unquestionable example of degeneration, wrote many years ago, "This head announces the monstrous alliance of the most eminent faculty of man, genius, with the most pronounced impulses to rape, murder, and theft."

The purpose of this paper is to show that wherever genius is observed, we find it accompanied by degeneration, which is evinced by physical abnormalities or mental eccentricities. It is a strange fact, however, and one not noticed by Lombroso or any other writer, as far as I know, that mechanical geniuses, or those who, for the most part, deal with material facts, do not, as a rule, show any signs of degeneration. I have only to instance Darwin, Galileo, Edison, Watts, Rumsey, Howe, and Morse to prove the truth of this assertion. It is only the genius of æstheticism, the genius of the emotions, that is generally accompanied by unmistakable signs of degeneration. I hope to amplify this conclusion in some future paper, but lack of space forbids it at the present time.

Saul, the first king of Israel, was a man of genius and, at times, a mad man. We read that, before his coronation, he was seized with an attack of madness and joined a company of kindred eccentrics. His friends and acquaintances were, naturally, surprised and exclaimed: "Is Saul among the prophets," *i.e.*, "Has Saul become insane." Again we are told that he was suddenly seized with an attack of homicidal impulse, and tried to kill David. Before this time he had had repeated attacks of madness, which only the harp of David could control and subdue. David himself was a man whose mental equilibrium was not well established, as his history clearly indicates. He forsook his God, indulged in licentious practices, and was, withal, a very immoral man at times. At his time, the Hebrews had reached a high degree of civilization. Abstract ethics had become very much developed, and any example of great immorality occurring during this epoch is proof positive of atavism or degeneration. As I have intimated before, many of the ancient Hebrew prophets, who were unquestionably men of genius, gave evidences of insanity; notably, Jeremiah, who made a long journey to the river Euphrates, where he hid a linen girdle. He returned home, and in a few days made the same journey and found the girdle rotten and good-for-nothing; Ezekiel, who dug a hole in the wall of his house, through which he removed his household goods instead of through the door; Hosea who married a prostitute because God, so he declared, had told him so to do; and Isaiah, who stripped himself naked, and paraded up and down in sight of all the people. King Solomon, a man of pre-eminent genius, was mentally unbalanced. The "Song of Solomon" shows very clearly that he was a victim of some physical disorder, sexual in its character and origin. The poems of Anacreon are lascivious, lustful, and essentially carnal, and history informs us that he was a sexual pervert.

Swinburne's poems show clearly the mental bias of their author, who is described as being peculiar and eccentric. Many of the men of genius who have assisted in making the history of the world have been the victims of epilepsy. Julius Cæsar, military leader, statesman, politician, and author was an epileptic. Twice, on the field of battle, he was stricken down by this disorder. On one occasion, while seated at the tribune, he was unable to rise when the senators, consuls, and prætors paid him a visit of ceremony and honor. They were offended at his seeming lack of respect, and retired showing signs of anger. Cæsar returned home, stripped off his clothes, and offered his throat to be cut by anyone. He then explained his conduct to the senate, saying that he was the victim of a malady which, at times, rendered him incapable of standing. During the attacks of this disorder "he felt shocks in his limbs, became giddy, and at last lost consciousness." Molière was the victim of epilepsy; so also was Petrarch, Flaubert, Charles V., Handel, St. Paul, Peter the Great, and Dostoieffsky; Paganini, Mozart, Schiller, Alfieri, Pascal, Richelieu, Newton, and Swift were the victims of diseases epileptoid in character.

Many men of genius have suffered from spasmodic and choreic movements, notably Lenau, Montesquieu, Buffon, Dr. Johnson, Santeuil, Crébillon, Lombardini, Thomas Campbell, Carducci, Napoleon, and Socrates. Suicide, essentially a symptom of mental disorder, has hurried many a man of genius out into the unknown. The list begins with such eminent men as Zeno, Cleanthes, Dionysus, Lucan, and Stilpo, and contains the names of such immortals as Chatterton, Blount, Haydon, Clive, and David. Alcoholism and morphinism, or an uncontrollable desire for alcohol or opium in some form or other, are now recognized as evidences of degeneration. Men of genius, both in the Old World and in the new, have shown this form of degeneration. Says Lombroso: "Alexander died after having emptied ten times the goblet of Hercules, and it was, without doubt, in an alcoholic attack, while pursuing naked the infamous Thais, that he killed his dearest friend. Cæsar was often carried home on the shoulders of his soldiers. Neither Socrates, nor Seneca, nor Alcibiades, nor Cato, nor Peter the Great (nor his wife Catherine, nor his daughter Elizabeth), were remarkable for their abstinence. One recalls Horace's line '*Narratur et prisci Catonis sæpe mero caluisse virtus.*' Tiberius Nero was called by the Romans Biberius Mero. Septimius Severus and Mahomet II. succumbed to drunkenness or *delirium tremens.*"

Among the men and women of genius of the Old World, who abused the use of alcohol and opium, were Coleridge, James Thomson, Carew, Sheridan, Steele, Addison, Hoffman, Charles Lamb, Madame de Staël, Burns, Savage, Alfred de Musset, Kleist, Caracci, Jan Steen, Morland Turner (the painter), Gérard de Nerval, Hartley Coleridge, Dussek, Handel, Glück, Praga, Rovani, and the poet Somerville. This list is by no means complete, as the well-informed reader may see at a glance, yet it serves to show, however, how very often this form of degeneration makes its appearance in men of genius. In men of genius the moral sense is sometimes obtunded,

if not altogether absent. Sallust, Seneca, and Bacon were suspected felons. Rousseau, Byron, Foscolo, and Caresa were grossly immoral, while Casanova, the gifted mathematician, was a common swindler. Murat, Rousseau, Wagner, Clement, Diderot, and Praga were sexual perverts. Genius, like insanity, lives in a world of its own, hence we find few, if any, evidences of human affection in men of genius. Says Lombroso: "I have been able to observe men of genius when they had scarcely reached the age of puberty; they did not manifest the deep aversions of moral insanity, but I have noted among all a strange apathy for everything which does not concern them; as though, plunged in the hypnotic condition, they did not perceive the troubles of others, or even the most pressing needs of those who were dearest to them; if they observed them, they grew tender and at once hastened to attend them; but it was a fire of straw, soon extinguished, and it gave place to indifference and weariness."

This emotional anæsthesia is indicative of psychical atavism, and is an unmistakable evidence of degeneration. Lombroso gives a long list of the men of genius who were celibates. I will mention a few of those with whom the English-speaking world is most familiar: Kant, Newton, Pitt, Fox, Beethoven, Galileo, Descartes, Locke, Spinoza, Leibnitz, Gray, Dalton, Hume, Gibbon, Macaulay, Lamb, Bentham, Leonardo da Vinci, Copernicus, Reynolds, Handel, Mendelssohn, Meyerbeer, Schopenhauer, Camoëns, and Voltaire. La Bruyère says of the men of genius: "These men have neither ancestors nor descendants; they themselves form their entire posterity."

There is a form of mental obliquity which the French term *folie du doute*. It is characterized by an incertitude in thought co ordination, and often leads its victims into the perpetration of nonsensical and useless acts. Men of genius are very frequently afflicted with this form of mental disorder. Dr. Johnson, who was a sufferer from *folie du doute*, had to touch every post he passed. If he missed one, he had to retrace his steps and touch it. Again, if he started out of a door on the wrong foot, he would return and make another attempt, starting out on the foot which he considered the correct one to use. Napoleon counted and added up the rows of windows in every street through which he passed. A celebrated statesman, who is a personal friend of the writer, can never bear to place his feet on a crack in the pavement or floor. When walking, he will carefully step over and beyond all cracks or crevices. This idiosyncrasy annoys him greatly, but the impulse is imperative, and he cannot resist it. Those who have been intimately associated with men of genius have noticed that they are very frequently amnesic or "absent-minded." Newton once tried to stuff his niece's finger into the bowl of his pipe, and Rovelle would lecture on some subject for hours at a time, and then conclude by saying: "But this is one of my arcana which I tell to no one." One of his students would then whisper what he had just said into his ear, and Rovelle would believe that his pupil "had discovered the arcanum by his own sagacity, and would beg him not to divulge what he himself had just told to two hundred persons."

Lombroso has combed history, as it were, with a fine-tooth comb, and very few geniuses have escaped his notice. This paper, so far, is hardly more than a review of his extraordinary, comprehensive work; therefore, I will conclude this portion of it with a list of men of genius, their professions, and their evidences of degeneration, as gathered from his book:

Carlo Dolce, painter, *religious monomania.*
Bacon, philosopher, *megalomania, moral anæsthesia.*
Balzac, writer, *marked epilepsy, megalomania.*
Cæsar, soldier, writer, *epilepsy.*
Beethoven, musician, *amnesia, melancholia.*
Cowper, writer, *melancholia.*
Chateaubriand, writer, *chorea.*
Alexander the Great, soldier, *alcoholism.*
Molière, dramatist, *epilepsy.*
Charles Lamb, writer, *alcoholism, acute mania, melancholia.*
Mozart, musician, *epilepsy, hallucinations.*
Heine, writer, *melancholia, spinal disease.*
Dr. Johnson, writer, *chorea.*
Malibran, *epilepsy.*
Newton, philosopher, *amnesia.*
Cavour, statesman, philosopher, *suicidal impulse.*
Ampère, mathematician, *amnesia.*
Thomas Campbell, writer, *chorea.*
Blake, painter, *hallucinations.*
Chopin, musician, *melancholia.*
Coleridge, writer, *alcoholism, morphinism.*
Donizetti, musician, *moral anæsthesia.*
Lenau, writer, *melancholia.*
Mahomet, theologian, *epilepsy.*
Manzoni, statesman, *folie du doute.*
Haller, writer, *hallucinations.*
Dupuytren, surgeon, *suicidal impulse.*
Paganini, musician, *epilepsy.*
Handel, musician, *epilepsy.*
Schiller, writer, *epilepsy.*
Richelieu, statesman, *epilepsy.*
Praga, writer, *alcoholism.*
Tasso, writer, *alcoholism, melancholia.*
Savonarola, theologian, *hallucinations.*
Luther, theologian, *hallucinations.*
Schopenhauer, philosopher, *melancholia, omniphobia.*
Gogol, writer, *melancholia, tabes dorsalis.*
Lazaretti, theologian, *hallucinations.*
Mallarmé, writer, *suicidal impulse.*
Dostoieffsky, writer, *epilepsy.*
Napoleon, soldier, statesman, *folie du doute, pseudo-epilepsy.*
Comte, philosopher, *hallucinations.*
Pascal, philosopher, *epilepsy.*
Poushkin, writer, *megalomania.*
Renan, philosopher, *folie du doute.*
Swift, writer, *paresis.*
Socrates, philosopher, *chorea.*
Schumann, musician, *paresis.*
Shelley, writer, *hallucinations.*
Bunyan, writer, *hallucinations.*
Swedenborg, theologian, *hallucinations.*
Loyola, theologian, *hallucinations.*
J. S. Mill, writer, *suicidal impulse.*
Linnæus, botanist, *paresis.*

The reader will observe that I have made use of the comprehensive word, writer, to designate all kinds of literary work except theology and philosophy. The above list is by no means complete, and only contains the names of those geniuses with whom the world is well acquainted. When we come to the geniuses of the New World, we find that they are few in number, and that they likewise show erraticism and degeneration. Poe was undoubtedly a man of great genius, and his degeneration was indicated by his alcoholism. Aaron Burr was the victim of moral anæsthesia, and Jefferson was pseudo epileptic and neurasthenic. Randolph was a man of marked eccentricity, and Benedict Arnold was, morally, anæsthetic. Henry Clay was addicted to an overindulgence in alcohol; likewise Thomas Marshall and the elder Booth. Booth also had attacks of acute mania. His son Edwin had paresis, so also had John McCulloch, John T. Raymond, and Bartley Campbell. A distinguished statesman and politician, and a man who stands high in the councils of the nation, has, for a number of years, given evidence of mental obliquity, by his uncontrollable desire for alcohol No power, outside of bodily restraint, can control him and keep him from indulging his appetite for alcohol when this desire seizes him. One of the most noted poets of to-day, whose verses stir the heart with their pathos and bring smiles to the gravest countenances with their humor, was, for a number of years, an inordinate user of alcohol. Robert Ingersoll is undoubtedly a man of genius and of considerable origi-

nality, and a close study of his writings shows conclusively his mental eccentricity. Judging wholly from his printed utterances, Mr. Ingersoll is only a superficial scientist and mediocre scholar. His power lies in his wonderful word imagery, and his intricately constructed verbal arabesques. He is a verbal symbolist. Symbolism, whenever found, and in whatever art, if carried to any extent, must necessarily be an evidence of atavism, consequently of degeneration.

Thomas Paine gave evidences of a lack of mental equipoise. We find scattered throughout his works the most brilliant, irrefutable, and logical truths side by side with the most inane, illogical, and stolid crudities. Among other men of genius who showed signs of degeneration we may include Alexander Stevens, Joel Hart, Adams, Train, Breckenridge, Webster, Blaine, Van Buren, Houston, Grant, Hawthorne, Bartholow, Walt Whitman. We must not confound genius and talent—the two are widely different. Genius is essentially original and spontaneous, while talent is to some extent acquired. Genius is an abnormality, but one for which the world should be devoutly grateful. Psychos, in the case of genius, is not uniformly developed, one part, being more favored than the others, absorbs and uses more than its share of that element, whatsoever it be, which goes to make up intellectuality, hence the less favored or less acquisitive parts show degeneration. Why genius should exist is one of the unexplained phenomena of nature, but that it is the result of natural causes I have not the slightest doubt.

Movable Liver.—Dr. Leube remarks on the rarity of this condition. The ligaments attaching the liver to the diaphragm must become loosened. (*The British Medical Journal.*) Pendulous belly due to repeated pregnancies, chronic ascites, etc., predispose. He records a case in a lad, aged seventeen, with heart disease and general dropsy. The abdomen had to be tapped, a fine trocar being used, and ten, sixteen, and ten litres were drawn off at different times. On admission the umbilicus bulged, a fluctuation thrill could be easily felt, and the abdomen was dull all over, except in the region of the stomach. The liver reached 10 ctm. below the ribs in the mammary line; the surface was smooth, the consistency hard, and the organs pulsating. Behind, pulmonary resonance extended on both sides down to the eleventh vertebra. After tapping, a depression was noted in the upper part of the right abdomen, and lower down a projection. This tumor measured ten to eleven ctm. in the middle line, and 15 ctm. in the right mammary line, and over it the percussion note was dull. The lower border could be followed from left to right, and the convex upper surface of the liver felt. Between the liver and the diaphragm fluctuation could be made out, and the surface of the liver could be dipped upon. The liver could be readily pushed up, the pulmonary resonance behind being then raised 1 ctm. The fluid seemed to remain between the liver and the diaphragm, whether the patient was lying down or sitting up. This was also proved at the necropsy, the lad dying some months later. The liver was very movable, enlarged, and of the nutmeg variety, with consequent induration. The suspensory ligament was 7½ ctm. long. The pulmonary resonance behind was raised when the liver was pushed up, owing to the displacement of the fluid backward. An additional cause of the mobility of the liver may lie in the loosening of its posterior attachment, for usually the vena cava is firmly bound with the liver and vertebral column. This case, as well as another seen by the author, occurred in men; hitherto movable liver has been exclusively seen in women.

Tubercle Bacilli.—Dr. Krönig succeeded recently in finding tubercle bacilli in the blood, taken from the heart post mortem of a case of acute miliary tuberculosis, by means of centrifugal motion. He thinks the method would also succeed with blood taken during life.

PASTEURIZED MILK AS SUPPLIED TO THE POOR BY THE STRAUS MILK DEPOT OF NEW YORK.[1]

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It is the purpose of the writer to describe some of the details of a most worthy charity, the expenses of which have been met by one man, since perhaps other equally charitable persons here or in other parts may be disposed to carry out the same sort of work, and may thus be able to benefit by the methods here described.

Since there can be no doubt that the milk supply may be a source of danger on account of the large number, and possible pathogenic character, of the micro organisms contained in it, it becomes of the greatest importance to investigate the manner of this contamination and the methods of avoiding its dangers. The most important source of contamination is undoubtedly the dairy, where dirty and ignorant methods are almost universally employed, not only during the milking but in the subsequent care of the milk. Delay in transportation affords time for the multiplication of the germs which have entered the milk.

It is evident that this danger may be met in one of two ways: best by a reformation in dairy methods and the manner of transportation, but failing in this, by sterilization. It is the object of this paper to show how this latter has been accomplished on a large scale in New York, for the purpose of supplying milk to the poor.

As such an undertaking is original and certainly worthy of emulation, and at the same time of great service to those members of the profession who practise among the poor, it may be of interest to know how the work was done and what the results were.

This enterprise is due to the philanthropy of Mr. Nathan Straus, who, in the spring of 1893, established and has since maintained a depot for supplying the poor with a good quality of raw and sterilized milk. His first aim was to obtain as pure a milk supply as possible, and for this purpose the dairy was inspected by Mr. S. K. Johnson, veterinarian of the New York Board of Health, and was approved by him. The depot in New York has been admirably planned and superintended by Mr. A. L. Kinkead. Three sorts of milk were provided: pasteurized ordinary milk, pasteurized modified milk, and raw milk.

Pasteurization at about 75° C. (167° F.) was used instead of sterilization at 100° C. (212° F.), under the assumption that it furnishes a more nutritious and more digestible milk than that sterilized at a higher temperature, and at the same time one which is freed from deleterious germs. Pasteurized ordinary milk was sold in eight-ounce bottles at one and a half cent each.

The pasteurized modified milk is simply a one-half dilution of ordinary milk with the addition of sufficient sugar of milk to bring up the amount in the dilution to five per cent., and enough lime-water to neutralize any slight acidity the milk might have, and then the mixture is pasteurized.

In this way a milk approximating somewhat mothers' milk is furnished. The formula used is:

Sugar of milk	12 oz.
Lime-water	8 oz.
Milk	1 gal.
Water	1 gal.

It is evident that the deficiency in this dilution is in fat. It was intended, however, for very young or sick infants, and for these answered very well. On the other hand, to have increased the fats would have introduced some difficulties. This pasteurized modified milk is dispensed in six-ounce bottles, a charge of 1½ cent being made for each bottle. With each six or eight-ounce bottle of milk a sterile nipple is supplied. A deposit is re-

[1] Read before the Section of Pediatrics of the New York Academy of Medicine on May 10, 1894.

quired of 2½ cents for each six-ounce bottle and nipple, and 3 cents for each eight-ounce bottle and nipple. It was thus intended to furnish for infants and sick children a sterile milk of good quality in a sterile nursing-bottle, with a sterile nipple through which it could be fed.

This milk depot was located on a pier at the foot of East Third Street, that situation being accessible to a very large tenement-house population. Awnings and seats were put up on the pier so that the babies and their mothers could remain there and inhale the fresh air from the river.

The building which was erected was, owing to the character of the site, of necessity long and narrow; it was placed several feet from the edge of the pier, so that an outside passageway connecting the rooms was reserved. The building was divided into four rooms. The first room is used for sterilizing the bottles, stoppers, and nipples, and preparing and pasteurizing the milk. The second room is occupied by large water-baths of iced water for keeping the pasteurized milk until it is delivered. The third room contains ice-boxes for the cans of raw milk. The fourth room, which is nearest the end of the pier, is devoted to the business of selling the milk.

The first of these rooms contains all the apparatus: the ovens for sterilizing the bottles at a dry heat of 150° C. (302° F.), the mixer used for the preparation of the modified milk, the pasteurizers, and the trough of running water for rapid cooling after pasteurization. This room has a slanting cement floor which can be flushed with a hose for purposes of cleanliness. The ovens for sterilizing the bottles are made of sheet iron and heated by gas. The bottles, after being thoroughly cleansed, are placed in this oven, which is then closed and the gas beneath is lighted. The bottles are kept here at a temperature of 150° C. (302° F.) for one hour. The bottles used were especially designed and made for the purpose. They have sloping necks so as to be easy to clean, and spheroidal bottoms so that they will not stand up. This latter peculiarity was introduced so that they might not be opened and left standing uncorked, thus allowing a further contamination of the milk by bacteria.

The method of pasteurization used is the same as that applied by me to the small apparatus which I described two years ago.[1] The principle is as follows: If into a definite amount of boiling water, the source of heat having been removed, a properly proportioned amount of cold milk be introduced in bottles under such conditions that they will not break, the temperature of the milk will be raised to the desired point, *i.e.*, 75° C. (167° F.). The amount of boiling water used in this apparatus is such that, in raising the temperature of the milk through about 60° C. (108° F.) it itself loses an equivalent amount of heat, so that when the milk reaches its maximum temperature the water is of the same temperature.

The apparatus used at the Straus depot consists of large copper boilers for the water, and copper receptacles for the bottles of milk. The boilers are twenty-four inches long and have a groove encircling them, to indicate the point to which they are to be filled with water. The receptacles consist of groups of copper cylinders, each one just large enough to contain one bottle. These receptacles are made of different sizes for six-ounce, eight-ounce, or pint bottles. The apparatus is thus essentially the same as the small apparatus referred to above, except that it is of larger size, allowing a greater number of bottles to be pasteurized at a time.

The method of pasteurizing the milk is as follows: The boilers are first filled with water to the groove and the gas stoves beneath them are lighted. The sterilized bottles, having been cooled, are now filled with milk and loosely stoppered with rubber corks which have previously been sterilized in boiling water. The stoppered bottles are then placed in the hollow copper cylinders of the receptacles, and the space surrounding the body of the bottle in each cylinder is filled with cold water. As they are prepared, they are left on a shelf until the water in the boilers generates steam vigorously, indicating a temperature of 100° C. (212° F.). The gas under the boilers is then turned off, and the receptacles containing the filled bottles are set in the boiling water; the boilers are then covered and not disturbed for half an hour. The milk here reaches a temperature of about 75° C. (167° F.) in ten minutes, and remains at that temperature for the remaining twenty minutes. The receptacles containing the bottles are then removed and placed in the tank of running water for twenty minutes, at the end of which period the milk in the bottles has reached nearly the temperature of the surrounding water, that is, 20°–25° C. (68°–77° F.). They are then carried into the next room, where the bottles are removed and placed in racks in iced water at a temperature of about 10° C. (50° F.). They are kept here until dispensed. Sufficient milk for one day's use is pasteurized, and it is never carried over.

As soon as one lot of receptacles is taken from a boiler, the gas beneath is lighted, and the temperature of the contained water, now about 75° C. (167° F.), is brought to boiling for a new lot of receptacles, which, with their bottles, are at once introduced.

A large number of experiments with milk subjected to this treatment, show that by it the practical purposes of sterilization are accomplished. With each bottle of milk a rubber nipple is supplied which has been sterilized in boiling water.

Of this pasteurized milk twenty-five hundred bottles were dispensed in a single week, and thirty-four thousand bottles were supplied during the season. Five persons were employed in this depot during the summer of 1893, including a cashier, a porter, and a scrubwoman. The actual technical work of pasteurizing was accomplished, for the most part, by one man. Many remarkable cases were observed of infants and children with bad surrounding, and suffering from severe gastro-intestinal disorders, who rapidly improved and attained good health on simply a good sterile food and the fresh air of the pier. It is interesting to note that, although this milk was often kept in hot tenement-houses where ice could not be afforded, only one case of the pasteurized milk turning sour was reported. This case was investigated, and it was found that the milk had been kept under the kitchen stove.

The scope and technical facilities of this charity will be enlarged this year. Six depots in various parts of the city will be established. The milk will be brought from Delaware County, N. Y., the herd supplying it being first carefully inspected by a veterinarian of the Board of Health. Both raw and sterilized milk will be supplied. The same formula will be used for the modified milk, which will be dispensed in six ounce bottles. Pasteurized milk will be sold in eight-ounce and sixteen-ounce bottles.

In addition to pasteurized ordinary milk and pasteurized modified milk, as supplied last year, a pasteurized milk diluted with barley water and sweetened with cane sugar, and containing also table salt, has been introduced at the suggestion of Dr. Jacobi. The formula used is:

Table salt	½ oz.
White cane sugar	10 oz.
Milk	1 gal.
Water	1 gal.

This barley milk will be dispensed in six-ounce bottles.

This depot will be prepared to supply hospitals and dispensaries.

205 West Fifty-seventh Street.

[1] On the Sterilization of Milk at Low Temperature, etc, MEDICAL RECORD, July 2, 1892.

He Swallowed Two Hundred Nails.—Gastrotomy was recently performed on an inmate of the Lancaster County (England) Lunatic Asylum, and nearly two hundred nails from one and a half to three inches in length were removed from the sorely overweighted stomach.

SOME ABNORMAL CONDITIONS OF THE GENERATIVE ORGANS, ASSOCIATED WITH MELANCHOLIA OR MANIA [1]

By W. GILL WYLIE, M.D.,

NEW YORK.

It is a generally recognized fact that abnormal conditions of the generative organs in women cause reflex disturbances to the nervous system, such as severe headaches, hysteria, etc.; but the fact that a chronic subinvoluted, or an enlarged and congested condition of the uterus, may induce a typical case of melancholia in some women, has not yet been fully accepted by the profession. There may be an abnormal condition of the nervous system present, and the uterine disease merely makes it active, for in many of my cases other members of the family have been mentally unbalanced, and several times I have had two sisters with the same symptoms. Even though there may be a strong predisposing cause in many cases, curing the local condition relieves all the symptoms. Most of my cases have been in women who have borne children, but in several instances I have cured well marked cases of what such men as Spitzka, Eroy, and Sachs have diagnosed as cases of melancholia, by amputating a diseased cervix uteri where diseased glands and follicles had kept up an enlarged and congested condition of the uterus in virgins. Some of these cases complained of no local pain, and a profuse leucorrhœa was the only indication of uterine disease, although most of such cases have dysmenorrhœa, backache, etc., due to the local disease, and as a rule the nervous symptoms would be classed as hysterical rather than melancholic. In three of the cases brought to me having marked delusions or acute outbreaks of mania, treatment of the uterus failed to relieve them. In one I could plainly define acute salpingitis and ovaritis, and removal of the appendages cured the mania. In the second case I could not define, even under ether, any disease of the appendages, but Dr. Spitzka said in his opinion the mental trouble was reflex, and I made an exploratory incision and found both Fallopian tubes occluded and the distal ends filled and enlarged with pus. The patient made a complete recovery, although for many weeks a trained attendant was with her night and day to prevent suicide before the last operation. The third case had well-pronounced melancholia, and I found a diseased cervix and subinvolution; this was treated in the usual way and for several months she seemed well, but then all symptoms returned. I pronounced the condition of uterus normal and proposed an exploratory incision, as she had some local pain on the sides, but on account of cost for operation, etc., she returned home, and later Dr. Van de Walker, of Syracuse, N. Y., operated and found salpingitis. The patient was reported cured.

The three cases reported to-night are those that have been recently under my care, and were all examined by well-known alienists. One well marked case of melancholia, with decided outbreaks of mania, was sent to me. Although she had a lacerated cervix uteri and some enlargement, it was not enough to account for the melancholia; so I turned her over to Dr. L. C. Gray, and he treated her as he liked for a year or more; but she was not cured, and then I operated under ether for the laceration, etc.; the effect on the mental condition was negative, but certainly did not make her worse, and I turned her over again to Dr. Gray. Without a single exception, all my cases were in every instance seen in consultation and examined by at least one alienist of good standing, and I am sure that some of the many cases of melancholia treated by opium, rest, etc., could be relieved, if not permanently and radically cured, if a gynecologist was called in consultation. I know that most doctors think they can examine and diagnose any serious disease of the uterus and appendages; but unfortunately many of them are merely unconscious of their ignorance, for all learned doctors are not artists, their brains may be great but their hands are not so well trained.

[1] Read before the Northwestern Medical and Surgical Society March, 1894.

Case I.—Mrs. S——, aged thirty-five, came to consult me, November 20, 1893. She said she had had six children; the last four years ago. After the third child was born she had some unusual nervous symptoms, but they passed off after a month or more. Since the birth of the last child she had not been well, had become very nervous, and had been treated for more than two years for nervous prostration. She imagined her husband did not like her, or that she did not love him, and everything was wrong; and at times she was so depressed that she was afraid she would kill herself. She had recently been treated by Dr. Baruch with baths, etc., and was improved in her general health. She looked in fair general health, her color was good. She had no actual pain anywhere, and had never had a local examination since the birth of her last child. After hearing her story I suggested that all her nervous symptoms might be due to subinvolution of the uterus, and she consented to an examination. I found a large and soft uterus held back in the pelvis by a very hard tumor about the size and the shape of a large kidney; it seemed to lay between the bladder or pubic bone and the uterus, but did not seem firmly attached. She gave a history of excessive menstruation, but no other direct symptoms of local disease.

I advised consultation with Dr. Sachs, he pronounced it a well-marked case of melancholia, and wished to give her treatment and keep her under observation for a week or two. Although I was told afterward that several of her family had had mental disease, I advised removal of the tumor and treatment for the subinvoluted uterus. She was admitted to my sanitarium December 1st, and Dr. Sachs began the orthodox opium treatment for melancholia; under this she was less nervous, but not relieved of her depressing thoughts.

December 11th, I operated and removed this most unusual tumor, which appeared to be a fibroid, detached entirely from the uterus and appendages, rolled up in the lower end of the omentum, and coated over with a calcareous shell. The tumor has no blood-vessels running into it and seems to have been treated by the surrounding tissues as a foreign body. It is shaped something like an abnormally large kidney; it was removed without difficulty and the patient made a good recovery. In less than two weeks patient was practically well. The uterus and subinvoluted pelvic tissues were further treated by the applications of boro-glyceride cotton pledgets put in the vagina twice a week; in six weeks patient was dismissed cured; no medicine except laxatives used after operation.

Case II.—Mrs. K——, aged thirty, was brought to my sanitarium by her father and brother, who were both physicians. In the fall of 1892 Dr. W., the brother, wrote me that his sister had been insane for four years, and for the past seven months she had been under the care of Dr. Stern, of Hartford, Conn., and seemed to be practically incurable, and wanted to know if I would take out her ovaries, as he believed that their disease caused the insanity. I wrote him that I would be glad to see the case, but I would not agree to remove the ovaries unless I could make out by local examination positive indications of actual disease of the ovaries.

December 28, 1892, I examined her. She had had four children. Four hours previous to birth of last child she had been well. Except for a time after birth of second child, she was very nervous and mentally much disturbed. The last labor was not difficult nor unusual in any way, but several weeks after labor she grew more nervous, and marked symptoms of melancholia came on, which in spite of treatment, rest, etc., gradually grew worse. Dr. Spitzka saw her and pronounced it a case of melancholia. For the past seven months she had been confined to Dr. Stern's sanitarium and was considered insane. She had a dislike for and was suspicious of her husband and family, and would get excited and rattle off a mixture of German and English that no one could understand for hours at a time. She was pale and thin,

but not in very bad general health. She needed constant care and watching by a nurse. She had been examined locally by Dr. Stern, but local treatment was not deemed necessary. On local examination I found a large, soft uterus, with marked relaxation and subinvolution of the vagina and pelvic blood-vessels. The uterus was fully as large as at two months' pregnancy, and the cervix was greatly enlarged and everted by diseased glands and follicles, and was lacerated to some extent. There was a history of excessive menstrual flow.

It was, in my opinion, a typical case of subinvolution, due to disease of the glands and follicles of the cervix, with some laceration of the cervix at labor.

Dr. Spitzka saw her and advised me to try the local treatment and operation to cure the subinvolution, etc., after regulating her bowels and feeding her carefully, and applying cotton pledgets to the vagina, soaked in sol. boro glyceride, twice a week.

On January 9, 1893, she was etherized and I dilated the uterus, curetted it, and amputated the diseased tissue of the cervix and sewed up the laceration, lining the cervical canal with flaps of healthy mucous membrane drawn in from the vaginal part of the cervix. I also dilated the anus and tied off some hæmorrhoids. For several days after the operation she was in an excited state, gabbling her jargon most of the time as she had done at intervals before, but on the tenth day she seemed to be perfectly rational and remained so without interruption. Gradually her general condition improved, and after the tenth day I made the boro glyceride applications to the vagina twice a week to hasten involution.

On January 31st she was discharged as cured, and went to her home in Brooklyn. For several weeks she came for the simple local treatment twice a week. Her menses became normal in amount and were regular till last fall, when she went over two weeks and then menstruated quite freely. Some of her old mental confusion returned, but after four or five boro glyceride applications to the vagina she felt well. She has gained flesh and strength, and attends to all her duties at home without trouble.

Case III.—Mrs. B——, aged thirty-two, admitted November 16th, said she had been married eight years, was always nervous, and several of her family had had serious mental symptoms. As a rule, she had enjoyed good health. She had had two children, and after the first child had severe pains in her head and was depressed, etc.; this gradually passed off. Eighteen months ago she had a miscarriage, since then she had some dragging sensation about the pelvis, and had gradually become very nervous and suffered, especially about the time of her menses, with severe occipital headaches, and could not help looking at this in a depressed and abnormal way. She was seen by Dr. Spitzka, who said it was melancholia, probably caused by reflex disturbance due to disease of the generative organs. Local examination revealed a large and soft uterus which bled to the touch of the sound on the endometrium. There was follicular disease of the cervix with a slight tear, and there was subinvolution of the vagina, and a laceration of the inner part of the perinæum which caused the lower end of the rectum to crowd forward the posterior wall of the vagina and form a rectocele.

November 20, 1893.—The uterus was dilated, curetted, and the diseased tissue of the cervix removed, and laceration sewed up. The perineum was also repaired and the anus dilated and treated.

The patient made a good even recovery, and after the use of the boro glyceride cotton pledgets twice a week she was dismissed cured. Once since then some of her nervous symptoms returned, but they promptly disappeared after three applications had been made of the boro-glyceride. I do not mean that the enlarged condition of the uterus which we call subinvolution, or the other diseased local conditions, will cause melancholia in all, or even in many women, but will do so in some cases, and that the melancholia seems incurable as long as the local disease remains uncured.

Clinical Department.

A CASE OF FACE PRESENTATION, WITH ROTATION INTO THE SACRAL CAVITY.

By JAMES B. BULLITT, M.D.,

GLOBE, A. T.

Mrs. N——, aged twenty-one, had previously given birth to two healthy, living children, first becoming a mother when seventeen years of age. During the third month of this third pregnancy she was threatened with an abortion; in addition to the pains, a considerable amount of bloody mucus was discharged, and the mouth of the womb was sufficiently patulous to admit the tip of the index finger. With the recumbent position and opiates the disaster was averted and she carried the child successfully until the end of the eighth month. At this time I was again called to see her; I found her in considerable pain, of intermitting type, referred to the lower portion of the abdomen chiefly, and complaining of great aching pains in the small of the back. Palpation disclosed the child's body in the first position, head presenting. The mouth of the womb was sufficiently patulous to admit the finger, which could feel the presenting head. There was a slight discharge of bloody mucus. I supposed this to be the beginning of labor, and left instructions to be sent for as soon as true pains began. The next morning, however, the condition was much the same; no true pains had commenced, and the discharge of bloody mucus had ceased. Five days later, on Friday, I was again called to see the case; true labor pains had begun the evening before, and the amniotic fluid had been discharged on Friday at two o'clock, it being six o'clock when I arrived. Pains were recurring at intervals of five minutes, and were strong, but no advancement seemed to be made. The mouth of the uterus was not more open than at the examination, five days before, just admitting the tip of the index finger. Gentle manipulation permitted the introduction of two fingers, upon which a diagnosis of face presentation with rotation posteriorly was made. The fingers received the sensation of the pelvis being bridged across, instead of being filled in with the round occiput as in ordinary occipital presentations. Under chloroform, and with the assistance of Drs. Collins and Fox, the uterine mouth was manually dilated; and then, with the hand in the vagina, two fingers on the supra-maxillary bones, and thumb on the brow, I made pressure upward, the other hand on the abdomen, pulling the head in the same direction. The head was readily dislodged; the external hand then pushed the occiput downward, the hand in the vagina pushing the chin still farther upward.[1] Conversion into an occipital presentation was readily effected; forceps were then applied, and a living child brought to the light in a short space of time. The whole procedure consumed an hour and ten minutes' time. The patient took chloroform very badly, rendering the manipulation more difficult and more lengthy than there was necessity for. The mother made an absolutely uneventful recovery; the temperature was never higher than 99° F., and in three weeks' time she was able to attend to her household duties. The child was a well developed girl, weighing seven and one-half pounds. There was a marked facial paralysis; this has gradually disappeared, leaving the child as sound as the fondest mother could desire.

The child's head was of an average size, not very small, while the mother's pelvis was also of average dimensions, not very roomy. In case of failure to carry the head upward and then convert the position into an occipital one, I should have attempted rotation of the face forward. Had this failed I was prepared to do a symphyseotomy, believing thereby it would have been an easy matter to slip the occiput beneath the pubic arch, from which point delivery would be plain sailing. Has the operation of sym-

[1] Manipulation described by Parry. American Journal of Obstetrics, May, 1875.

physeotomy been so employed? So far as I know there has been no report of such a case, but it would be unquestionably feasible. With the forceps and without symphyseotomy, the chin has been dragged down over the sacrum and perinæum, when the occiput and calvarium glided underneath the pubes.[1] Such procedure is certainly of very violent nature, and fraught with danger to both mother and child.

A CASE OF LOOSE CARTILAGE IN THE KNEE-JOINT.

By CHARLES G. R. JENNINGS, M.D.,
ELMIRA, N. Y.

Mr. A. B. G——, civil engineer, gave a history of trouble with his knee, dating back several years to an injury received in foot-ball at college. From that time he had repeated attacks of synovitis. During one of these, while examining his knee I discovered a floating cartilage on the inner side of the joint, which immediately escaped from beneath my finger and could not be found again. For nearly a year after that he was comparatively free from trouble with the knee. The cartilage reappeared unexpectedly one day while he was descending a flight of stairs, and as a result of its becoming pinched between the bones he almost fell headlong. As soon as he recovered from the shock of pain and surprise, he clapped his hand upon the knee and felt the foreign body. From that time on it made its appearance repeatedly at short intervals. It seemed to enjoy the freedom of the whole synovial sac. Wherever the sac extended, this wandering body was liable to go, sometimes being felt behind the knee in the popliteal region, sometimes above the knee beneath the quadriceps extensor, at other times below the patella, but most frequently on either side of the joint. The patient finally came to me for operation.

I doubted whether it would be possible to fix the cartilage in an accessible part of the capsule and keep it there long enough to administer an anæsthetic and prepare for a formal operation, so I resorted to the following plan of procedure: First I had the knee shaved and thoroughly scrubbed with green soap and washed with ether and sublimate; then a full antiseptic dressing was put on. The patient was allowed to go where he pleased, but was advised, whenever the cartilage made its appearance, to keep it in sight if possible until I could be notified and remove it. In a few days it got pinched again, slipped to the inner side of the joint, and there he held it until I was ready for the operation.

With my left thumb I crowded it as far down over the head of the tibia as possible and on the inner aspect of the joint. The sac seemed very loose and large, so that the body felt as if it were at the top of a well, with a strong tendency to fall back into the cavity. Cocaine was injected beneath the skin in the line of incision. Then, while pressing my thumb between the cartilage and the general synovial cavity, thus completely shutting off the joint from the pocket in which I had the cartilage isolated, I cut down upon it until the sac appeared. Stopping all hemorrhage, I then incised the sac, when the shining pearly button of cartilage presented, and was seized with mouse-tooth forceps and removed through the slit very much as one slips a button through a button-hole. The cartilage had no attachment, was a perfectly round flattened disk, three quarter inch in diameter, and upon one edge there was a short fringe by which it had originally been attached to the synovial membrane. No synovial fluid escaped, nor did air enter the joint, as I held my thumb down upon the bone, shutting the opened portion of capsule off from the rest. Catgut sutures were used for capsule and skin. No drainage was used, as I felt confident it would not be needed. An ordinary dry aseptic dressing was applied, the leg put on a posterior splint, and the patient was kept in bed for four or five days. There was no rise of temperature whatever nor any local disturbance. He very soon left off the splint, and resumed walking with perfect use of the leg. The knee was capable of the fullest flexion and as good as new. It is now eight months since the operation, and he has had no trouble with his knee at any time since the cartilage was removed.

In cases where the cartilage is so freely movable and hard to retain in sight, I believe the above operation is better than to open the joint in the usual manner under anæsthesia and fish for a loose cartilage which may require very considerable manipulation within the synovial sac before it can be grasped and removed.

272 Baldwin Street.

[1] Smellie, Hicks, and Braun. Science and Art of Midwifery: Lusk.

CYST OF PHARYNGEAL TONSIL.

By ANNETTE E. LAMPHEAR, M.D.,
NEW YORK.

On February 2, 1894, G. M——, male, aged twenty-four, Swede, cook by occupation, came to Dr. Jonathan Wright's clinic at Roosevelt Dispensary for treatment of "catarrh."

The patient's family history was good. The personal history was somewhat vague. About ten months ago he had a sore throat, which was probably a peritonsillitis. Has had no aural trouble, no nasal obstruction, but for an indefinite time a great deal of post-nasal dropping, and expectorates very much mucus.

Examination of nasal fossæ and oropharynx showed nothing particularly abnormal, but on introducing a post-nasal mirror the vault of the pharynx seemed low. This appearance was seen to be due to the projection downward from the middle of the vault of a slightly oblong body about the size of a bean. The membrane covering this projection was smooth, and differed none in appearance from the remainder of the naso-pharynx. The diagnosis of cyst was made and verified by a digital examination.

After cocainization the mass was removed with post-nasal forceps, its detachment requiring considerable traction. The cyst cavity was filled with plugs of inspissated mucus.

The microscopical examination of its wall showed both the outer and inner surface to be covered with stratified pavement epithelium. The inner surface was smooth, excepting near its attachment to the pharynx, where there were a few crypts. The mucous membrane was rich in lymph corpuscles, but there were very few lymph follicles.

It would seem that this cyst resulted from adhesions between the lateral folds of a hypertrophied pharyngeal tonsil, its wall being formed by the complete closing in of the median fissure. The form of epithelium, stratified pavement, I think, is somewhat unusual, most authorities giving the ciliated columnar as the type of the naso-pharynx. This is the only case of retention cyst in over five thousand patients treated in the Throat Department of Roosevelt during the last six years, and I have been able to find only one other case reported in our American journals, that of Dr. Wright's, in the Philadelphia *Medical News*, of 1889.

Extract of Leeches in the Prevention of Thrombosis.—Dr. Sahli reported to the International Medical Congress that an infusion of leeches given by intravenous injection would prevent thrombosis. From experiments made on rabbits it was found that an infusion of the head of one leech to every two ounces of blood in the body was the required dose. For a man weighing one hundred and thirty pounds, between eighty and ninety leeches would be needed. As the effect of the remedy is not permanent, it being found necessary to repeat the injection at short intervals, it is improbable that this new medicine will find a very wide application.

Progress of Medical Science.

The Etiology and Treatment of Hydronephrosis.—The surgical treatment of various pathological conditions of the kidney has of late years come very prominently to the front, thanks in great part to the improvements that have been introduced into the *technique* of the operative procedures, improvements which have had for effect to make nephrectomy about as safe as an ordinary ovariotomy, and that is saying a good deal. The affections of the kidney in which the surgeon has shown himself able to intervene with a fair amount of success are hydronephrosis and pyonephrosis. Pyonephrosis comprises two varieties, which require to be distinguished both on pathological and on therapeutical grounds. There is one form associated with calculus. In this form it is *pyo*nephrosis from the commencement, and should be dealt with preferably by nephrotomy and drainage, especially if by the removal of the obstructing calculus the patency of the ureter can be restored. The other form occurs as the result of suppuration in a hydronephrosis. In this form the disorganization of the secreting portion of the organ is usually so complete that nothing remains but to remove the cyst which has become a source of danger to its possessor. In a paper which Mr. Bland Sutton recently read before the Medical Society of London, he pointed out that to cause hydronephrosis the obstruction to the flow of urine must be incomplete, or, if complete, intermittent, because sudden complete and permanent obstruction tends to cause atrophy rather than dilatation of the kidney. This tendency to intermission is one of the most remarkable phenomena associated with hydronephrosis, which thus simulates the "phantom tumors" dear to gynecologists. When bi lateral, the intermission may be alternate, and the diagnosis then presents less difficulty. The most curious feature about these cases of hydronephrosis is that though an obstruction to the flow of the urine must presumably at some time or another have existed, no trace of the original obstruction is sometimes discoverable during operation or *post mortem*. This fact is perhaps, after all, not so surprising as it looks at first sight. It is quite conceivable that the original condition which gave rise to the obstruction may have become obliterated by the grave changes, both in the kidney and in the neighboring structures, involved by the formation of an extensive hydronephrosis. Thus a movable kidney which originally rejoiced in sufficient mobility to kink or otherwise obstruct the ureter, may subsequently, when developed into a cyst of considerable dimensions, have contracted adhesions, thus disguising the primary cause of the obstruction. It is assumed, moreover, that obstruction of the ureter low down is invariably associated with dilatation of the ureter right up to, and including, the pelvis of the kidney. Mr. Henry Morris pointed out that this conception tended to mislead, because in some cases the ureter may bulge in a particular spot as the result of internal pressure acting on walls of unequal resistance, and that spot may be near the pelvis of the kidney, in which event the dilatation would probably be confounded with that of the kidney pelvis; or the bulge, if lower down, may compress the ureter above it as an aneurism sometimes does in respect of the artery on which it is situated. It follows that non-dilatation of the ureter throughout the whole or the greater part thereof does not preclude the possibility of the hydronephrosis being due to some obstruction low down. Hydronephrosis is a curiously silent affection; indeed, the only symptom for a long time may be an increase in micturition. This is particularly the case in respect of unilateral nephrosis, which may form without any indication of renal disease, and may remain unnoticed and undiagnosed until by its size it gives rise to symptoms incidental to the presence of such a growth. In the double affection the same silent course may be pursued, until the kidney substance has become so much degenerated that enough does not remain to provide for contingencies, and then the slightest strain on the excretory organs may determine grave symptoms of renal inadequacy. It is now generally conceded that in presence of a hydronephrosis, *a fortiori*, if suppurating, and provided the other organ is in good working order, the best course is to remove it by nephrectomy. Inasmuch as it is essential to ascertain for certain the condition of the other organ, the surgeon is advised to proceed by a median incision through the front of the abdomen, through which he can without difficulty examine the condition of both kidneys. Should he deem it expedient to remove the diseased organ, he then closes the anterior wound, and turning the patient over, removes the kidney through a lumbar incision—that is to say, without entering the peritoneal cavity. This is a point worth bearing in mind by gynecologists, who not infrequently stumble on a renal tumor which has been cut down upon under the impression that it was ovarian or uterine. In the flurry of the discovery the gynecologist is tempted to go ahead and to remove the organ through the peritoneum, instead of closing the original wound and attacking it from behind, thereby adding considerably and needlessly to the risk of the intervention. Altogether the question is a very interesting one, for it is full of promise in a department where formerly little or no hope could be entertained of affording relief.—*Medical Press.*

Sloughing of Cervix after Labor; Recovery.—Dr. Magnaux has observed this complication in a woman, aged thirty-eight, who had been twenty times pregnant—twelve labors at term, one in the middle of the sixth month, and six miscarriages, while the twentieth pregnancy began at the end of November, 1892. She was seen at the Hôpital Tenon in April, when no morbid history could be traced. On August 26, 1893, labor set in at 10 P.M. She was delivered at 9 A.M. the next morning, having been admitted into the same hospital. The cervix, it was noticed, was never entirely effaced, and during the efforts at expulsion the anterior lip projected at the vulva, and appeared œdematous and deep violet in color. The child was very big, and there was some trouble in delivering the shoulders; the head had presented in the first position. The left arm was damaged, but the child was saved. The cervix uteri of the mother was found next day lacerated on both sides. A part of the posterior lip was found partly detached. The anterior lip, over three inches long, projected at the vulva; it was sloughy. The vagina was syringed daily with lysol, and the cervix painted with iodine and iodoform gauze passed into the cervical and vaginal canals. Within a week the sloughy tissues had separated. By September 12th, no trace of any anterior lip remained, the posterior lip was very thin, and about half an inch long. The child's left arm remains partially paralyzed.—*Archives de Tocologie.*

The Antiseptic Power of Ichthyol.—As the result of recent experimental studies Dr. Abel states that: 1. The ichthyol preparations in weak solutions, and in a short time, destroy the pyogenic and erysipelas streptococci. The action of various commercial preparations is practically identical. Ichthyol is used with success in the suppuration from these cocci. 2. The staphylococcus aureus and albus, the bacillus pyocyaneus, the bacillus of typhoid, ozæna, and anthrax, the spirillum of Asiatic cholera, show more or less resistance to ichthyol, in that when pure it must act upon them by the hour in order to destroy these organisms in cultures. 3. The diphtheria bacillus in fresh colonies is easily destroyed by weak ichthyol solutions, while mature ones are acted upon with difficulty. Therefore it is useful in diphtheria only in prophylaxis. 4. Ichthyol has rendered good service in the treatment of typhus and ozæna, although it can only with difficulty make harmless these infections. 5. It is recommended that it should be preserved only in substance or in a fifty per cent. solution; weaker solutions may be culture mediums for micro-organisms. Weak solutions should be sterilized by heat, which has no influence upon its properties.—*Centralblatt für Bakteriologie.*

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE VALUE OF LIFE IN CASES OF ACCIDENT.

THE recent action of the Committee on Preamble of the Constitutional Convention of the State of New York, in favor of retaining the limit of damages by railroad accident resulting in loss of life to five thousand dollars, has naturally given rise to some adverse criticism by the daily press. The objection taken is founded upon the absurdity of allowing any limit for damages short of killing, and stopping by legal enactment at the sum of five thousand when the victim is entirely sacrificed. The question resolves itself into the ridiculous solution that a part is of more value than the whole. In other words, it appears to be cheaper to kill a man outright than to strain his back, put out an eye, crush his foot, or maim his hand. In the former case he is done for at once, his earning capacity is at an end, and the railroad companies give the price for the carcass; while in the other the probabilities of his still being able to earn something of a living are offset against any sum of damages within the range of the sympathies of the jury.

The real question bears upon the earning capacity of the victim. It is well known that a wide latitude, in case of maiming, is given in determining the relative earning capacity of different individuals, and damages are awarded accordingly. Why the relative value of lives should not in such a score be equally considered does not appear. The life insurance companies, in questions of life expectation at given ages, with different surroundings and with stated hereditary proclivities, have reduced the charges to mathematical calculations and govern their premiums accordingly. But by the present rule all lives are equal before the law, no matter how young or old the victim may be, what his earning capacity has been proved to be, what his future might reasonably guarantee, and what the degree of loss may be to his dependent family. In this respect the ordinary day laborer, with an earning capacity of two or three dollars daily, is on an equal footing with the professional man, the expert artisan, or the progressive tradesman whose possibilities are almost without limit.

If we rest the claim for damages upon the basis of reasonable expectation of earnings, which, in fact, is the only way of proper adjustment, we are forced to admit that the highest award should be rendered in case of death; while in mere maiming the parties accountable for the same should pay in proportion to the degree and extent of the incapacity occasioned by the particular injury. If the jury is competent to decide the extent of damages in one case, why not in the other? To the medical man, who is accustomed to weigh all the circumstances in the cases of injury, this is the only way to do justice to all.

The railroad companies are, of course, in favor of the statute as it now is, the reasons for which are too obvious for mention.

LAWYERS ON THE FEES OF DOCTORS.

FOR some reason, lawyers have developed a special tendency to lessen the monetary value of physicians' services. It is the common experience that a doctor's bill which has to be *visèd* by a lawyer will surely be cut down. Laboring men, business men, corporations, and most classes of society, even including clergymen, are usually willing to pay for medical services; but the lawyer seems always to think them appraised too high. This at least is the complaint which is often made to us. And quite in harmony with this is an editorial expression on the subject by the New York *Law Journal*. The editor says:

"In dealing with rich patients and clients, physicians and surgeons, and lawyers acting in cases not involving specific property, should make out their bills not commensurately with the wealth of their employer, but simply on the basis that he is rich enough to pay whatever is right. The charges should be fixed according to the practitioner's standing and experience and the amount of labor involved, the customary rates of practitioners of equal standing in the same community for similar services being kept in view as a guide and a possible corrective. This general rule would not preclude the acceptance of smaller fees from poor people, but it would debar a practitioner from charging a man worth $1,000,000 more than one worth $100,000 for the same service. We believe it is essentially communistic and subversive of professional conscience and dignity to charge a rich man all that can be screwed out of him, in order to make up for what one thinks he ought to have received on account of professional acts of charity or mercy."

The wording of the above is ingenious, and the plea made has an air of justice. Certainly no one will disagree with the statement that "a rich man should not be charged all that can be screwed out of him." But it would be inferred that no less should be charged for a capital operation on a person of very moderate means than for one done on a multiple millionaire, or a person upon whose life depends the safe and productive management of some great industrial, social, or political work. The fact is, we believe, that most surgeons have a certain scale of maximum and minimum fees. The maximum is a fixed one and is applied to the wealthy. All would apply it to millionaires, while few would apply it to a person worth one-tenth that sum, since this does not by any means make him wealthy if he lives in this town.

Bellevue Hospital.—Plans are being made for the reconstruction of certain portions of Bellevue Hospital, New York, that part which is used as reception office, examination and admission rooms, besides store-room of the hospital.

DOCTORS AND DEFINITIONS.

A CERTAIN weekly paper in this town has adopted the practice of publishing some scurrility about the medical profession in each issue. This is not a matter of very much importance; still it possesses some academic interest to physicians, who, as a rule, take both eulogy and satire in a very equable manner.

What one might object to as regards this particular departure in journalism is the fact that the man who does the medical items in the aforesaid weekly gets them out of ancient jest books, which is, we think, a wrong practice and dishonest to his readers. For example, the latest medical joke is a "Definition of a Doctor," this definition being: "A person who, when you are ill, comes and guesses what is the matter with you." Now, this is very good and amusing, but it is not as good as the definition given by Voltaire (A.D. 1740), to the effect that "a doctor is a person who pours drugs of which he knows little into a body of which he knows less." Yet it is evidently the same idea. Swift's satire was equally brilliant. "Apollo was the god of physic and the sender of diseases. Both were originally of the same trade and continue so." And something in the same line was the epigram of Martial:

> "Diaulus, the doctor, was a sexton made,
> Though he is changed, he changeth not his trade."

The material for similar definitions of doctors exists in literature from ancient to modern times. It is resurrected at regular intervals and is always the same. The point is, that doctors are ignorant, useless, avaricious, pretentious, dishonest, slayers of men, or else that they are promoters of suffering, heartless, and brutal vivisectors. The jokes always show that doctors do not know, they only guess; they do not cure, they only pretend; they do not tell the truth; they carve up living animals who all the time suffer conscious and excruciating agony; they enjoy the misery of others, and they work to prolong it; their bills are high, their labor light, their responsibilities trivial, and their rewards in money and appreciation enormous.

This is the sum and substance of the medical jokes of the past two thousand years. They are all in print, or at least samples of them, and form a part of accessible literature. We could refer the amiable malefactor who writes his weekly medical jokes in this New York paper to the volumes in which all the above facetiæ are compiled, but he shows that he possesses it.

Why not, however, give the world some new jest on the evils of medicine, or else give proper credit to our sympathetic critics of the past?

And why not sometimes be pleasant also and show the other side? Even Voltaire, who was a bigger man after all than the average New York jest-maker, said:

"Nothing is more estimable than a physician who, having studied nature from his youth, knows the properties of the human body, the diseases which assail it, the remedies which will benefit it, exercises his art with caution, and pays equal attention to the rich and the poor."

Mr. Lawson Tait was going to move to London, according to some of the English papers, a year or so ago. Now the American papers state that he is going to Chicago.

News of the Week.

Rewards for Fecundity.—The Province of Quebec has a law bestowing 100 acres of government land upon every father of a family who has twelve living children, issue of a lawful marriage. Up to the present 174,200 acres of rich agricultural land have been given away in bounties to 1,742 fathers of twelve or more children, who have complied with the conditions of the act. Not all of these proud fathers, however, are satisfied with the amount of the bounty, for instances of families of twenty or more children are not rare, and the fathers of these want a proportionately higher reward for their patriotic efforts. One old gentleman, Mr. Paul Belanger, of River du Loup, wants 300 hundred acres, and bases his claim upon the fact that he has thirty-six living children. Another claimant for an increased allowance is Mr. Theoret, of St. Genevieve. His wife, who is but thirty years of age, has presented him with seventeen children. She has just given birth to triplets for the second time in five years, and has had twins three times. Mr. Theoret hopes to acquire a large portion of the Province if his wife will continue to do her share.

Medical Education in China.—Western medicine is slowly making its way in the Celestial Empire, under the fostering care of the progressive Viceroy Li Hung Chang. The medical school established by him in Tien Tsing is in a flourishing condition, and it has been decreed that the medical officers of the army and navy shall in future be taken from its graduates. The medical stores for use in both services must first be approved by the faculty of this school.

Professor Max von Pettenkofer has resigned from the University of Munich. The cable reports that this has aroused a great deal of public indignation, as it is understood that the resignation was enforced by pressure from Berlin in consequence of Dr. Pettenkofer objecting to some of the anti-cholera measures recommended by Professor Koch.

The American Association of Obstetricians and Gynecologists will hold its seventh annual meeting at Toronto, Ont., Wednesday, Thursday, and Friday, September, 19, 20, and 21, 1894, to which a cordial invitation is extended to the medical profession.

The German Association of Scientists and Physicians will hold its sixty-sixth annual meeting in Vienna during the week ending September 30th. The Austrian Government has made an appropriation of $5,000 to defray the expenses of the meeting.

A Russian Leper Colony. The St. Petersburg correspondent of the London *Daily Chronicle* states that the general governor of the Amoor province is arranging in the vicinity of Nicolaivsk for a colony of lepers, which will be surrounded by a stockade, to prevent the patients leaving the place. Land is being set apart within the enclosure for gardens and the necessary buildings.

The Kentucky School of Medicine.—At the meeting of the Association of American Medical Colleges, held in San Francisco on June 7, 1894, the Kentucky School of Medicine, of Louisville, Ky., was dropped from membership in the Association.

The University of Halle has been celebrating the second centenary of its foundation on Thursday, Friday, and Saturday of this week.

Dr. Jules Comby, of Paris, editor of the *Revue Mensuelle des Maladies de l'Enfance*, has been created Chevalier of the Order of the Crown of Italy.

Dr. Paul Berger has been appointed to the chair of Clinical Surgery in Paris, vacant through the death of Dr. Léon Lefort.

The Mortality in Rio de Janeiro, for the second half of the month of March, was at the rate of 65.31 per 1,000 inhabitants.

The Plague Bacillus.—Dr. Kitasato, the Japanese bacteriologist, has been investigating the plague in Hong Kong, and believes he has found the cause of the disease in a bacillus resembling somewhat that of anthrax. It consists of short, slender, straight rods. Animals inoculated with cultures of this micro organism died with symptoms of the plague.

Tractions on the Tongue for Asphyxia.—M. Laborde has recently published a small work on this method of treating the apparently dead, in which he describes the procedure as follows: Seize the anterior third of the body of the tongue firmly between the thumb and index-finger, using a towel or handkerchief to prevent slipping. Then make strong, repeated, rhythmical tractions on the organ, from fifteen to twenty times a minute, imitating the rhythmical respiratory movements. The operator must be sure that the root of the tongue is drawn up with each movement of traction, a very easy thing to do when asphyxia is profound. The first sign of returning consciousness is a resistance to this drawing up of the root of the tongue. One or two movements of deglutition are then usually made, followed soon by a noisy inspiration, which Laborde calls the "inspiratory hiccup." The operator is cautioned to persevere in this procedure in spite of apparent insuccess, the author having seen the first indications of returning life appear after tractions had been practised for over an hour. M. Laborde's explanation of the mode of action of this procedure is that two extremely sensitive nerves supply the tongue, namely, the glosso-pharyngeal and the lingual, while the superior laryngeal sends several filaments to it. These nerves, taking their origin directly or indirectly fron the respiratory centre, stimulate it when stretched, and the bulb stimulates, in its turn, the phrenic nerve which supplies the diaphragm.

A Medical Press Association is to be established in Germany after the model of a similar organization already existent in France.

Professor Czerny, of Heidelberg, who recently declined the chair of surgefy in Vienna, is said to have been led to take this step through a misunderstanding of the conditions. The call has now been accepted by Gussenbauer, of Prague. Dr. Mikulicz, of Breslau, was the third candidate nominated by the professorial college to fill Billroth's place.

Kumyss Poisoning.—A number of persons in one of the health resorts of the Caucasus were poisoned last summer by ptomaïnes in the kumyss which they drank. An investigation showed that the maker had neglected to scald out his barrels, and he was thereupon sentenced to six weeks' imprisonment and to pay the costs of the investigation.

A Lapsus Calami.—In the issue of June 30th, we noted a fortuitous combination of items, in which the notice of a meeting of a medical society was immediately followed by a prescription for sexual debility, and erroneously attributed the same to the *Journal of the American Medical Association*. Our esteemed contemporary very properly confines advertisements of proprietary medicines to the outside pages where they belong, and we regret having, through pure accident, done it this injustice.

The Hospital for Consumption at Ventnor has received a gift of $10,000 from an anonymous donor in memory of two daughters who died from phthisis.

Professor Madelung, of Rostock, has been appointed Professor of Surgery in the University of Strasburg in succession to the late Professor Luecke.

Anomalous Fœtal Nutrition in Twin Gestation.—In the article with this title by Dr. John C. Hupp, published in the issue of July 21st, the words, "the cord of the smaller fœtus," were omitted in the ninth line. It should have read: "There was only one placenta, which was attached to the ordinary sized cord of the larger fœtus. The cord of the smaller fœtus, which was not larger than a thread, encircled its neck," etc.

Professor Joseph Hyrtl, who died recently in his home near Vienna, at the age of eighty-four, was best known, perhaps, as an anatomist, but he was besides a remarkable linguist, an original investigator, and an eloquent lecturer. He was one, and the last survivor, of the brilliant coterie of scientists who made the Medical School of Vienna so celebrated throughout the world. A writer in the London *Telegraph* says that, "as a teacher, Professor Hyrtl was almost unsurpassed. He was so gifted with eloquence that his lecture-room could only with difficulty accommodate the crowds of students of all nationalities that flocked to hear him. As an original investigator and scientist, Professor Hyrtl attracted the warm admiration of his contemporaries. He was the first German writer who published an independent treatise on topographical anatomy. His celebrated handbook on that subject appeared in 1847. With the publication of his 'Lehrbuch der Anatomie des Menschen,' of which the twentieth edition has appeared this year, a new era was opened in anatomical text-books. His books have been translated into all European tongues. Professor Hyrtl's celebrity as a linguist is well known. He had so completely mastered the tongue of Cicero that it became in his mouth a living language, and he was always prepared to give the fullest explanations in elegant Latin to all inquirers. His knowledge of the Greek classics also was amazing, and in 1861 he delivered before the Paris Academy a much-admired extemporaneous lecture in the French language. In his seventieth year he took up the study of Hebrew and Arabic with such success that three years later he was able to produce his remarkable work upon the anatomical ideas of the Jewish and Moorish physicians. Hyrtl was distinguished for his benevolence, and, considering the modest amount of his income, his benefactions were as-

tonishing. He supported poor students and benevolent institutions in a generous fashion. He caused two orphan institutions to be erected in Mödling, near Vienna, to accommodate two hundred orphans, and thus bestowed on Lower Austria a gift that cost him £30,000."

The Cholera.—In St. Petersburg the epidemic appears to be abating somewhat, the number of new cases daily reported being reduced to about eighty, and of deaths to between forty and fifty. The disease is spreading, however, in Austrian Galicia near the Russian frontier, and prevails to an alarming extent in the district of Cracow. In Marseilles also many cases of cholera have been reported during the past week, and the Spanish consul in that city has informed his government that the epidemic is spreading with great rapidity, although the local authorities deny its presence. The disease is present in many towns in Belgium along the river Meuse, and thirteen cases with six deaths are reported in Maastricht, Holland, situated lower down on the same river—another fact, if any more were needed, in support of the theory of the water-borne nature of cholera, so strenuously insisted upon, among others, by Ernest Hart. In Radom, in Russian Poland, a serious riot was occasioned by the attempt of the authorities to bury the bodies of a number of persons, who had died of cholera, in the cemetery of the town. A mob resisted this attempt and compelled the bodies to be taken elsewhere. They then made an attack upon the hospital and carried a number of sick persons out into the surrounding grounds. The police had hitherto been powerless, but they were reinforced by a detachment of gendarmes, who fired into the crowd, wounding many persons.

Dr. Francois Clément Maillot died in Paris on Sunday, July 29th, at the age of ninety years. He was made a member of the Legion of Honor in 1839, and held many high offices in the civil and military services between 1825 and 1860, and was a retired medical inspector of the French army at the time of his death.

Deaths from Sunstroke.—Statistics of the Health Department show that the number of deaths from sunstroke in this city in the past four years was: The deaths in 1890 were 62; in 1891, 95; in 1893, 43, and until July 26th of the present year, 40. In 1892, when there were 320 deaths, 29 occurred in June, 252 in July, and 39 in August. In each year two-thirds of the deaths occurred among males.

The Cancer Germ.—Dr. van Nissen, of Wiesbaden, has found a micro organism in cancerous tissue, which he is led to regard as the cause of the disease. In cultures the cell-groups bore a very close resemblance to the so called epithelial cell nests of carcinoma. He calls this new micro-organism claspodium cancerogenes, or, for the sake of brevity, canceromyces. The organism is described briefly in the *Centralblatt für die medicinischen Wissenschaften*, No. 21, 1894, but the author promises to present a more complete account of his experiments shortly.

Professor Nothnagel has become unpopular with the Vienna students by reason of his attempts to combat the anti Semitic agitation. The students recently made such an uproarious demonstration that the rector has ordered all the courses in medicine to be suspended.

La Revista de Tisiologia is the title of a new quarterly journal devoted to the study of tuberculosis. The editor is Dr. Valenzuela, of Madrid.

Chloroform Mortality in Melbourne.—An Australian paper points out that the mortality from the administration of chloroform in Melbourne is about three per annum in a population of 450,000.

The Use of the Decimal System of Weights and Measures is to be obligatory on physicians and pharmacists in Russia after the end of the present year.

Women are now allowed, through a recent decree of the sultan, to practise medicine in the Turkish dominions.

The King of Italy has given a prize of $4,000 to Drs. Tizzoni and Luciani for their experimental work on the functions of the cerebellum. And still the functions are somewhat in doubt, though these gentlemen have advanced our knowledge greatly.

Sewing-up Wounds by an electrical machine is one of the latest advances in surgical technique.

Physicians as Dispensers of their own Medicines.—According to a bill now before the French Senate, after passing the Chamber of Deputies, physicians are not to be allowed to dispense any medicine at all.

The New York Lying-in Asylum.—The managers of the New York Lying-in Asylum, which has for many years maintained an admirable out-door as well as in-door maternity service for the benefit of the poor, have secured, as the future home of their institution, the fine old mansion of the late Hamilton Fish, standing at the corner of Second Avenue and Seventeenth Street, and fronting on Stuyvesant Square.

Rochester (N. Y.) Hospital.—The Board of Managers of the Rochester State Hospital held its quarterly meeting July 17th, at which meeting the plans and specifications for a new building and repairs made necessary by the recent fire were forwarded to Albany for approval. The appropriation for the new building is $65,000.

A Protestant Hospital.—Articles have been filed for the establishment of a new hospital in the city of Seattle, Wash. The objects are to found and maintain a hospital under the management of Protestants, for the medical and surgical treatment of sick and infirm persons, with the object of furnishing such treatment, as far as possible, gratuitously to the poor.

The Memphis Board of Health has sent a communication to the Tennessee State Board of Health, calling for such action as will lead to legislation prohibiting infant and child life insurance within the State, on the ground that the practice leads to criminal negligence of the proper care of children, and is to that extent prejudicial to public health.

A New Fluke has been discovered in America by Professor Ward, of Nebraska. It is called the *Distoma Ringeri*.

Venereal Diseases in the British Army.—According to some statistics presented to the House of Commons by the war secretary, out of a total of 196,534 men in the British army there were in one year 52,155 admitted to hospitals to be treated for venereal diseases, or more than one-quarter of the effective force.

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

AMERICAN ORTHOPEDIC ASSOCIATION.

Eighth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from Vol. 45, page 766.)

First Day, Tuesday, May 29th.

The Etiology of Deformities in Knee-joint Disease.—Dr. A. E. Hoadley read a paper with the above title, in which he claimed, after experimenting with eighty different subjects, that the flexor muscles are under all conditions, except when paralyzed, stronger than the extensors. Also, that the flexor muscles may at certain times become extensors, and that in all ordinary deformities of the knee it is not the result of the flexors dominating over the extensor. The cause of flexion in case of disease was rather due to the pain, and consequent attempt, on the part of the patient, to change the position of the joint.

Dr. Wirt made a demonstration of the mathematics involved in the mechanics of the knee-joint.

Dr. Whitman asked if the gastrocnemius did not play an important part in the deformities at the knee.

Dr. Phelps said that the experiments of Dr. Hoadley differed from those of Haughton, of Dublin, who had done a great deal to make the subject plain; also from his own, which were published in the Transactions of the Association last year. He said that the extensor muscles lose force as flexion takes place, while the flexors increase in force as the limit of flexion is reached. Rotation is produced by the biceps muscle, which is absorbed into the head of the fibula.

Dr. Ridlon said as muscles reach their limit they lose strength.

Dr. Hoadley, in closing, said that Dr. Phelps's experiments had been limited to one case, while his own series rightly should have more weight. In reply to Dr. Whitman, he agreed that the gastrocnemius muscle was a powerful flexor.

Hoffa's Operation for Congenital Dislocation of the Hip-joint.—Dr. E. H. Bradford, of Boston, presented a pathological specimen from a child on whom he had operated for a congenital dislocation, the patient dying subsequently from diphtheria. The acetabulum in this case, while somewhat misplaced, was well formed. Owing to the abnormal position, he failed to find the acetabulum at the time of the operation, but had made a socket for the head of the femur at another place in the ileum. The speaker said that the specimen illustrated that there was danger from curetting too freely into the acetabulum of the cases, as the bone might be perforated. He also stated that Hoffa was wrong in the assertion that the acetabulum was the thickest part of the pelvis. A specimen of rachitic deformity of the hip joint was presented by the same speaker. The condition was similar to that described by Dr. Whitman.

Dr. Whitman emphasized the point that patients afflicted with congenital dislocation of the hip not only suffered great disability, but oftentimes had pain.

Dr. Ryan said he had not met with cases complaining of pain.

Dr. Weigel agreed as to the disability, and thought the specimen presented by Dr. Bradford showed that more might be obtained by treatment by traction.

Dr. DeForrest Willard thought that if all cases of congenital dislocation were like the specimen presented, the operation would be called for, as the acetabulum was deformed, and he believed it would be found even more so in the majority of the cases.

Dr. Bartow spoke of a case of congenital dislocation he had treated by traction, and the head of the bone remained in the acetabulum.

Dr. Wirt had seen cases who complained of pain when walking.

Dr. Phelps said dislocation might take place in any direction. He considered the operation justifiable, as not a single case had been cured otherwise. Hoffa had said to him that he did not operate after the patient was four years of age.

Dr. Bradford, in closing, confirmed what had been said about pain and disability. He considered it important to obtain union by first intention in Hoffa's operation. Dr. Phelps's remarks he considered theoretically correct, but he had seen adults without much disability.

Second Day, Wednesday, May 30th.

Flat-foot.—Dr. Royal Whitman, of New York, opened the discussion on this subject. He did not believe that flat-foot is caused by shortening of the tendo Achilles, but rather that it is due to a disproportion of the weight thrown on the arch of the foot when in a faulty position. Flat-foot he considered a dislocation of the bones of the arch, which must be reduced and kept so by some form of apparatus which will not restrict the tendinous or muscular structures which assist in maintaining the arch. It is usually advisable to forcibly correct the deformities under ether, even over-correcting the deformity so as to produce a club-foot, and apply a plaster-of-Paris splint so as to temporarily hold the foot in this position. He does not advocate the cutting operation, but considers the prognosis good when his line of treatment is followed out.

Dr. Shaffer, of New York, in calling attention to the mechanism said that studies must be made from the normal foot. Flat-foot, he believed, was due to shortening of the gastrocnemius muscle, while paralysis of the same muscle resulted in talipes calcaneus. The reason he gave for not having flat-foot in cases of talipes equinus was that the relation of the axis of the leg to the mediotarsal joint was changed. In no case of flat-foot was the gastrocnemius ever elongated.

Dr. Wirt thought that Dr. Shaffer was in error as to the mechanical principles involved. By his model he has shown a difference in the force exerted on the astragalo scaphoid joint and the breaking down of the arch when the tendo Achilles is shortened by representing that the heel rises in this condition, while in the normal foot he represents flexion of the tibia forward at the ankle joint without any rise of the heel. Now, in truth, do we walk in this manner? In the act of walking the muscles of the calf are contracted. The tendo Achilles is pulled upon and the heel rises from the ground, the weight being borne upon the ball during fully one-half of the step. The difference in length between the normal tendo Achilles and one slightly shortened would be made up by a greater and earlier contraction than in the case of the normal, which would put the foot upon the ball in about the same length of time.

Dr. McCurdy said that Marks had shown that motion at the ankle joint was not necessary for comfort in walking.

Dr. Ketch asked Dr. Shaffer if it was first necessary that we should have equinus before flat-foot occurred.

Dr. Bartow thought the gastrocnemius muscle is shortened in flat-foot, but that this usually takes place after the change in the arch of the foot.

Dr. Weigel suggested the taking of a series of instantaneous photographs of a man in the act of walking, so as to test the position of the ankle joint.

Dr. Shaffer, in closing, said it was necessary that the motion of the ankle-joint be stopped at a certain point which throws the weight upon the medio tarsal joint and thus produces flat-foot. He had employed an instrument for stretching the gastrocnemius muscle in cases of flat-foot.

Rachitis.—Dr. A. Jacobi, of New York, in opening the discussion, said that rachitic deformities represented

a comparatively new disease in this country. He remembered when it was difficult to find a sufficient number of cases for his clinics. Some of the appearances and general physiognomy of rachitic children are as follows: Less hair on the head; the veins are more dilated; the head has a quadrangular appearance and may be hydrocephalic; the forehead is more prominent, the bones in this region may be two or three times the normal thickness, this may all disappear, but often some deformity remains; the teeth are irregular and decay early; the second crop are usually hard and of a yellow appearance; we may have the Hutchinson teeth in rachitic children; the trunk is short in these cases, clavicle is thickened; chest prominent anteriorly, lower ribs stand out, and the rosary may appear as early as the second month. May have kyphosis or scoliosis of the spine; pelvis is rarely deformed, but adults who have been the subjects of rachitis may have undeveloped pelves; the sacrum is usually more steep in the rachitic child; the extremities suffer greatly in this condition; the epiphyses are painful, the diaphyses are usually bent; fractures are rare because of the periosteal thickening; the ligaments are flabby and soft; the periosteum suffers from rachitic deposits; there may be hemorrhages during the course of this disease which are not due to scurvy; deformities are due to changes in the epiphyses, and when calcification takes place growth stops. The general system and the muscles, both the voluntary and involuntary, suffer as much as the bones; this is not paralysis but simply a weakness; the heart is large and the arteries are small, the cause and effect of which it is difficult to decide; the stomach is dilated; constipation is usually one of the first symptoms. Other internal organs may be displaced.

Dr. Benjamin Lee, of Philadelphia, said that rachitis in its earlier stages was most marked in the structures where the lime salts and phosphorus should be most prominent. The child may appropriate the fats and yet fail to assimilate the salts. Constipation is usually present, or the patient may have diarrhœa. It sleeps poorly, and this restlessness may be the only symptom for the first few months. Convulsions are not uncommon, twitching of the muscles of the eyes, spasm of the muscles of the larynx, and vaso motor disturbances are common; bronchitis is very frequent. Nerve starvation, he says, explains many of these phenomena. The deformities the result of rachitis are numerous.

Diagnosis.—Acute rheumatism, he said, was rare in young children; the absence of snuffles and sore throat ruled out syphilis. In considering the prognosis, the author thought that death was often due to rachitis which had not been diagnosed. The most important point in the treatment was diet. Exercise, both passive and active, he said, would often prevent deformities. One question which he brought out, regarding the sterilization of milk which had become so prevalent during the past few years, was to the effect that the lactic-acid ferment, which is destroyed by this process, might be necessary to take up the salts. This he thought was the reason why the wealthy as well as the poor suffered from this disease.

Dr. Samuel Ketch, of New York, said that the orthopedist did not have the opportunity of seeing cases of rachitis in their incipiency. He does not think sufficient attention is paid to prophylactic measures. Many of the deformities are due to faulty positions assumed while rachitis is present, and he suggested the use of portable frames so as to enable these cases to get fresh air. Braces, he thought, should not be used on the very young, but massage and manual force would usually suffice to overcome these deformities. All apparatus applied to cases of bow-leg and knock-knee should be frequently observed by the surgeon, so that its shape might be changed to meet the exigencies of the case. Massage should be done in all these cases, even though they be under mechanical treatment. Frequent tracings of the deformities should be made. Operation should not be resorted to in rachitic deformities until eburnation of the bones has taken place.

Third Day, Thursday, May 31st.

Correction of Rachitic Deformities.—Dr. DeForrest Willard, of Philadelphia, said that the deformities might be corrected by apparatus before solidification of the bones had taken place, but it was often difficult to have the treatment properly carried out at home, and he was of the opinion that the correction of the deformity by a greenstick fracture, produced by manual force, was preferable. When it was necessary to use the osteoclast, he said the epiphyseal line should be avoided. Osteotomy he considered frequently necessary in extreme cases, especially in large children and adults. The anterior curves of the tibia, he said, were extremely difficult to correct by apparatus, and for this, osteoclasis by manual force, or osteotomy, should be performed. He had abandoned the cuneiform osteotomy, as a simple division of the bone had proven quite as satisfactory. The author thought that osteotomy was indicated nine times out of ten. Osteoclasis, he said, pulpifies the soft parts overlying the bone. In performing an osteotomy he does not use the Esmarch bandage, as the hemorrhage which takes place prevents infection from without.

Dr. Weigel asked Dr. Willard if he now advised the use of drainage, after operating upon the anterior tibial curvatures, as he once did. Dr. Weigel had not found the drain necessary. He thought more of osteotomy than of osteoclasis.

Dr. Ryan, also, agreed that osteotomy was more exact than osteoclasis. He said that cuneiform osteotomy was practically abandoned, except for anterior tibial curvatures. He asked Dr. Weigel if he sewed up the wounds. Dr. Ryan did not think any case should be operated upon, before four and a half years of age, as the deformity was likely to relapse. Deformities often improve without any treatment, as was shown by a family of children, residing near his office, who had received no medical attention whatever.

Dr. Gillett had never performed osteoclasis. He preferred osteotomy. He spoke of an accident following osteotomy, in which he failed to get perfect correction of the deformity, the patient became dissatisfied, and he was unable to follow up the case.

Dr. Cook, while he preferred osteotomy to osteoclasis, said the results were not always good.

Dr. Bartow did not think the fear of injuring the soft parts was well grounded. In exceptional cases, where the bone was hard, osteotomy should be performed. He thought it possible to correct some of these deformities, without even breaking the bone, by means of the osteoclast.

Dr. Townsend said that one of the advantages claimed for osteoclasis was that the bone was broken without being converted into a compound fracture.

When Mr. Grattan visited America, he had seen him use his osteoclast on two different cases, and in both considerable laceration of the soft parts was produced. While neither of these patients had any trouble following the laceration of the soft parts, he thought there was considerable danger of getting such a wound infected from the instrument, which was not aseptic, or from the patient himself, because the limb is rarely prepared for this operation, as it would be for osteotomy.

Dr. Coolridge said he thought a great deal depended upon the instrument employed. With the Lorenz osteoclast he had never seen the skin broken.

Dr. Bartow said that he always protected the skin, over the region to be operated upon, with moleskin plaster.

Dr. Ketch did not agree with Dr. Ryan, that cases got well without treatment. He believed, in all instances, massage had been employed at home.

Dr. Lee thought that with osteoclasis a simple condensation, without displacement of the soft parts, would result.

Dr. Willard, in closing, said he rarely performed the cuneiform osteotomy at present, as he had gotten excel-

lent results from the simple linear division of the bone, which was just as strong afterward, and the recovery was much quicker. When he does perform cuneiform osteotomy now, the wound is left open without drainage, as he does not think much of union by blood-clot. On the contrary, he thought large blood-clots sometimes prevented the callus from being thrown out. After all osteotomies he emphasized the importance of over-correcting the deformity. The details of after-treatment, of applying the plaster of Paris, should be done by the surgeon, and not by his assistant.

Rubber Heels for Patients with Pott's Disease.—Dr. John Schapps, of Brooklyn, N. Y., presented a shoe with the rubber heels attached, which he said was employed for the purpose of overcoming concussion of the spine while walking. This simple procedure had given considerable relief to the patients.

Elastic Traction in the Immediate Treatment of Club-foot.—Dr. Bernard Bartow, of Buffalo, read a paper with the above title, in which he advised division of the contracted tendons and the correction of the deformity in club-foot as early as at three weeks of age. When once the foot is gotten into the normal position, he advises the use of elastic traction, because the foot is not restricted, as when immobilized with plaster of Paris and other braces, and thus atrophy of the muscles does not occur. The elastic traction is made by rubber bands, extending (1) from the knee to the foot, for overcoming the equinus, and (2) others on the outside of the foot, for overcoming a varus. These rubber bands are fastened to attachments, which are held in position by adhesive plaster. When the two sets of bands are applied, one, for the purpose of abducting and rotating the foot outward, the other, for overcoming the equinus, the force to be exerted can be regulated by the number of bands. It was advisable to instruct the mother, after the adjustment of the above-described apparatus, to manipulate the foot at regular intervals, so as to over correct the deformity, by which means the atrophy of the muscles, which would occur if an immobilization apparatus were applied, is prevented.

Dr. Shaffer was of the opinion that continuous and intermittent traction had their places. As to nutrition, he had seen muscles develop very perceptibly in a few weeks after intermittent, forcible traction.

Phelps's Method for the Cure of Club-foot in Adults.—Dr. William E. Wirt, of Cleveland, in concluding his remarks on the above subject, said that adults and older children would not endure the amount of traction necessary to correct these extreme deformities, and that even tenotomies, combined with tarso-clasis, were not sufficient to cure the cases, although the deformity might be temporarily corrected. Not infrequently it is necessary to divide the plantar structures openly, after the method of Phelps, and divide the tendo Achilles, together with the application of tarso clasis, to be able to overcome the deformity. In the worst cases, in addition to the above, it will sometimes be necessary to remove the wedge-shaped piece of bone from the tarsus.

Discussion.—Dr. Weigel said the term "cure" should not be applied to these cases of club foot, as he considered only improvement was obtained. He reported a case of double congenital club-foot, and double club-hand, and presented a photograph of the same before operation. On the right foot he had performed Phelps's operation, and later, cuneiform section of the bones of the leg, just above the joint. The operation performed upon the left foot consisted in the removal of the head of the astragalus. The Phelps operation, he says, does not answer in the extreme cases, but must be supplemented by the removal of bone. He does not agree with Dr. Wirt in his idea of dividing the tendo Achilles by an open incision, but thinks the subcutaneous method just as good.

Dr. Townsend said that with all due deference to the Phelps operation, it was not always successful; and he believed the force applied by the long lever, after the incision had been made, was very essential. The Phelps operation, he considered, had a limited field.

Dr. Ketch said that Dr. Weigel's case suggested a spastic condition, nor did he think the Phelps operation had a broad field.

Dr. Houston, of Montreal, said he did not think the surgeon should be wedded to any operation. The individual case, he said, should always be considered.

Dr. Coolridge spoke for Dr. Myers, who had to return home, and described an operation for club foot, in which he made a small incision over the most prominent bony deformity; through this he inserted a scoop for the purpose of removing the bone. Then the foot is forced into position.

Tarso-clasis.—Mr. Nicholas Grattan, F.R.C.S., of Cork, Ireland, in a paper on the above subject, said he had, during the past two years, paid considerable attention to the treatment of resisting cases of club-foot. He had used the Thomas wrench without effect, but now, after having made some alterations in the osteoclast which he presented to this Association in 1892, he was able to exert sufficient force to produce fracture of the tarsus, which, he believes, is often necessary, and should be repeated at intervals, until resistance ceases, and the foot has assumed its normal shape and position. If the equinus persists, tenotomy of the tendo Achilles should be performed, and it is possible by this means, combined with osteo clasis of the tibia and fibula close to the ankle-joint, to permit the rotation of the foot upward, and to enable the patient to walk, on whom astragalectomy had failed to cure. Flat foot can be easily corrected by forcible instrumental rectification.

Mr. Edmund Owen, F.R.C.S., of London, said he had compared the old fashioned or orthodox treatment of club-foot with the radical operation of Phelps, and he preferred the latter method. While he had met with relapses from the older methods, such had not been the case since the employment of the free and open division of all constricting bands in the plantar region; and for the perfect correction of these deformities it was often necessary to open up the astragalo-scaphoid joint. The foot is forced into an over-corrected position, that of calcaneo-vulgus. The wound is treated openly, and a fixed plaster-of Paris dressing applied.

Dr. H. P. Kaptyn, of Abcande, Holland, was pleased with the results obtained from the open operation of Phelps; he had previously reported forty-two operations on thirty-two cases, to the International Congress at Berlin, of the cases in Holland treated after this method. In the newly born, he employed the fixed gypsum apparatus. The cases treated by the Phelps method ranged from nine months to fifteen years of age. Most of the cases were double. In no case, did he have to remove any of the tarsal bones, nor even open up the tarsal joint, as reposition of the foot was always possible after the contracted tissues were freely cut.

Excision of the Knee for the Relief of Crippling from Infantile Paralysis.—Dr. Ap Morgan Vance, of Louisville, Ky., said he had reported his first operation for the production of synostosis in 1885, it having been performed one year previously, to relieve the crippling from infantile paralysis. Since then he had performed the operation six times, making in all seven operations upon five patients. The two eldest patients, respectively five and seven years of age, died of some inflammatory complication of the heart, possibly endocarditis. The younger cases may be subjected to this treatment, with every possibility of success, but he does not advise the operation as late as eight or ten years of age.

Dr. A. M. Phelps, of New York, presented some modifications of his own splints, and of those of other surgeons, for knee and ankle joint diseases. The same author presented a new, improved celluloid corset. He said the apparatus combined neatness, elegance, durability, and lightness.

An Improved Machine for Treating Scoliosis.—Dr. Max Schede, of Hamburg, Germany, in a paper giving a

description of an apparatus, in which the patient was partially suspended, the shoulders and pelvis being fixed, advised that direct pressure be made over the ribs, over the most prominent part. He advised the placing of the patient in the apparatus, twice a day, for half an hour each time, and the application of as much pressure as could be borne with comfort. A good spinal support was worn during the interim; periodical measurements of the deformity should be made, so as to reckon the changes. Development of the muscles was also to be encouraged. In three months, the author claimed, appreciable improvement was often noted, in the most obstinate cases.

Infantile Apoplexy and Infantile Paralysis.—Mr. William J. Little, of London, suggested that copious, fatal apoplexy in the brain may occur during existence in utero, and that a lighter amount of apoplexy in a nerve-centre, at an earlier stage of uterine life, may be the cause of some of the anomalous conditions or congenital distortions, in which the growth and development of a limb had been interfered with. The author is of the opinion that the imbibing of alcohol in excess is the cause of the death of infants in utero, and says he recalls many instances of congenital distortions among the well-to-do, which have been produced by mental shock and mental trouble happening to the pregnant woman.

Treatment of Deformity Following Infantile and Spastic Paralysis.—Dr. De Forrest Willard, of Philadelphia, laid great stress upon the prevention of deformity, in the above class of cases, by means of apparatus. When contractures have occurred, it is necessary to resort to surgical measures before the apparatus is applied. Myotomy and tenotomy are perfectly safe operations, and the muscles are placed in better condition for action than they were before the operation. Forcible straightening, following division, is usually necessary. In spastic paralysis, lengthening of the tendons assists better locomotion. Locomotion is the best form of gymnastics.

An Original Operation for Wry neck.—Dr. A. M. Phelps, of New York, had devised an operation so as to prevent scarring, by beginning the incision at the lobe of the ear, which was carried upward, along and behind the ear, following the creases to its superior angle. The incision was carried directly across, into the hair, and extended obliquely downward, keeping within the hair line, to the side of the neck. This flap was retracted, and the offending sterno-cleido mastoid cut. Sometimes it was necessary to divide that muscle at its sternal end. The after-treatment was by a brace made of straps, attached to a plaster-of-Paris corset, together with gymnastic exercises.

Fixation in the Treatment of Fractures into Joints.—Dr. Ansel G. Cook, of Hartford, Conn., claimed that it has been conclusively proven, by experiments on men and animals, that fixation, *per se*, no matter how long continued, does not produce ankylosis; that ankylosis is the result of injury and consequent inflammation, and that early passive motion only irritates the injured structures and increases the production of callus, thus bringing about ankylosis. He thinks that immobilization is only useful when inflammation is present, or until the broken bones and ruptured ligaments have been mended. From three to eight weeks of immobilization is the time usually required. Lastly, passive motion, massage, and use, until the tissues become normal. Occasionally complete rupture of all adhesions, under an anæsthetic, is required.

Dr. Ryan said that passive motion should be employed as early as the sixteenth day.

Dr. Brackett asked Dr. Ryan if he had not been careful to regard the matter of pain produced by passive motion.

Dr. R. F. Weir, of New York did not believe in early passive motion in the case of fractures into joints.

Disease of the Shoulder joint.—Dr. W. R. Townsend, of New York, read a paper with the above title, in which he said out of 3,000 cases of joint diseases only 21 were diseases of the shoulder joint. The disease comes on more slowly in childhood than in adult life. Atrophy of the deltoid muscle may be so marked, in these cases, as to simulate paralysis. The sternal end of the clavicle is at times dislocated, while the shoulder-joint may be partially or completely ankylosed. Loss of function is one of the most prominent symptoms. The duration of the disease he considers to be from two to three years. The prognosis should be considered from the general condition of the patient and the local condition of the joint. The treatment may be by simple rest in a sling, or by fixation with plaster of Paris. The operative treatment may be partial or complete excision of the joint. Rarely is it advisable to excise the joint before the eighteenth year, up to which time partial arthrectomy is preferable, so that the growth of the bone will not be interfered with. The author did not think the statistics gathered before aseptic and antiseptic surgery were understood should be a criterion for our work of to-day.

Dr. Ketch said that Dr. Judson once read a paper on this subject, in which he explained its infrequency by the comparative freedom from injury and the blood-supply of the shoulder-joint. Dr. Ketch had not found ankylosis of such frequency as did Dr. Townsend.

Dr. Shaffer said he had an apparatus by which traction was made with an axillary crutch, and he does not think excision advisable, as his cases had usually gotten well without abscess. It is sometimes advisable to break up the adhesions under an anæsthetic.

Dr. John Ridlon said he had not seen any case which required excision, nor did any of them go on to ankylosis which would submit to mechanical treatment. He had used the traction splint of Shaffer in a considerable number of cases, but did not find that they did so well as when simple immobilization, without traction, was employed, while, on the contrary, in one or two cases, the pain had been increased by this traction splint.

The treatment which he employed was to bind the elbow to the side; supporting the hand by sling or "halter," and covering the shoulder, top and side, back and front, with two or three layers of stiff adhesive plaster.

Dr. Townsend, in closing, said that he felt all surgeons had to experience a period of radicalism in the treatment of joints, which resulted in more conservative views being taken. He wished to emphasize, however, the difference between the shoulder- and hip-joints. In the former, he considered it all important to have free movement, while in the latter a weak or frail joint is worse than one which is ankylosed.

Infantile Scorbutus in its Relation to Orthopædic Surgery.—Dr. Henry Ling Taylor, of New York, in a paper with the above title, said that infantile scorbutus, due to imperfect feeding, had lately attracted considerable attention, over seventy cases having been reported at a recent discussion of the New York Academy of Medicine. The disease, he said, is insidious in its onset and, unless recognized, may be fatal. The symptoms, some of which may be absent in any particular case, are: 1, a dusky pallor; 2, emaciation; 3, peevishness and general sensitiveness, which is often excessive; 4, exquisitely tender swellings, without local heat, near the joints of the lower extremities, due to subperiosteal hemorrhage; 5, inability to move the lower extremities and the trunk (pseudo-paralysis); 6, spongy or bleeding gums near the erupted teeth; and, most significant of all, 7, rapid improvement and cure on diet of fresh milk and orange-juice. The peri-articular swellings have been frequently mistaken for rheumatism, which may the more happen as fever may be present. A baby, a year old, was sent to the writer last summer, from the South, for treatment for a supposed spinal or hip affection. This baby had been fed on condensed milk, and presented a spinal projection at the upper lumbar region, with rigidity, in addition to the usual symptoms. The cachexia, spongy and bleeding gums, powerlessness of the legs, exquisite sensitiveness, and a swelling above the right

ankle made the diagnosis clear. All the symptoms disappeared, inside of three weeks, on a diet of Pasteurized milk and orange-juice. As other cases have been mistaken for hip-disease—osteitis of the knee, sarcoma of the knee, and infantile paralysis—it is particularly needful for orthopedists to bear in mind the possibility of scurvy, when differentiating infantile joint and paralytic affections. Discussion.

Dr. Ketch said that Dr. Jacobi, in discussing this subject, did not consider these so-called cases of pseudo-paralysis anything more than weakness.

Dr. Gillett reported a case, and said that he had found it difficult to distinguish it from rheumatism. His patient, however, was somewhat older than those being discussed.

Dr. Shaffer said that the differential diagnosis in scurvy at this age was from rachitis, Pott's disease, and rheumatism.

Dr. Ryan remarked that the late Dr. Knight, of the Hospital for Ruptured and Crippled of New York, had spoken of the scorbutic diathesis.

Dr. Taylor, in closing, said that he considered rachitis and scurvy to be different diseases.

The Association went into executive session, and the papers for the fourth day were read by title.

Election of Officers.—The officers elected for the ensuing year were as follows: *President*, Dr. John Ridlon, of Chicago; *First Vice President*, Dr. Bernard Bartow, of Buffalo, N. Y.; *Second Vice-President*, Dr. L. A. Weigel, of Rochester, N. Y.; *Secretary*, Dr. Royal Whitman, of New York; *Treasurer*, Dr. E. G. Brackett, of Boston.

Paralysis in a Telephone Employee.—Dr. Ewald reported at a recent meeting of the Berlin Medical Society the case of a young telephone operative who was just putting two subscribers in communication with each other, when she felt a violent shock and lost consciousness. When she came to herself she was found to have right hemiplegia, with contraction of the muscles on the right side of the face. The latter disappeared in a few days, and the paralysis of the arm gave place to tremor with ataxia; the paralysis of the lower extremity persisted longer, but was finally replaced by tremor. In the course of some months other nervous symptoms appeared, such as headache, vertigo, lumbar pains, trembling of the tongue, asthenia, etc. All measures looking to relief of these symptoms were ineffectual. The question arose whether the affection was hysterical in character, but none of the stigmata of hysteria could be found after a most careful examination. Inspection of the switch-board in the central telephone office showed that the operator, at the time of making the communication, may have become part of the circuit, receiving the full strength of forty volts.

The Value of Combining Heart-tonics.—Convallaria majalis is a simple cardiac tonic and a safe remedy. Its action is similar to that of digitalis, but not so marked. It causes slowing, and increases the force of the heart-beats. But it will frequently be found, in lessening compensation, that each of the foregoing drugs individually fails, and disappoints us after a time. Then a combination of all three often produces an effect little short of marvellous. Once or twice in recent years I have been called in consultation over cases of advanced mitral disease, in which central failure has shown itself by extensive dropsy of the limbs, œdema of the lungs and liver, and a general water-logged condition of the system. On inquiry of my colleagues in attendance as to the exhibition of digitalis, the reply has been, "He has had it." A similar response has been given in the cases of strophanthus and convallaria. But they had not been given collectively—and when this was done, benefit speedily accrued to the patient, and credit to his medical advisers.—Dr. Taylor, in *The Clinical Journal*.

American Medical Association.

Forty-fifth Annual Meeting, held in San Francisco, Cal., June 5, 6, 7, and 8, 1894.

(Continued from Vol. 45, page 799.)

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

First Day, Tuesday June 5th.

Suprapubic Hysterectomy.—Joseph Eastman, of Indianapolis, President of the Section, read the annual address, taking for his subject the operation of suprapubic hysterectomy. This operation, the speaker said, was original with him, and the method of procedure was illustrated by means of diagrams and instruments.

The method consists in tying the uterine arteries in the broad ligament close to the cornua of the uterus, and then peeling the peritoneum from the uterus, leaving the uterine arteries in the pelvis. The advantages claimed are the slight hemorrhage and the greatly diminished liability to septic infection by having no ligatures in the abdominal cavity. In closing the abdominal wound he said that the surgeon should expend greater efforts upon the proper suturing of the peritoneum than upon the external appearance, so that the wound will drain outward and not into the peritoneal cavity. He prophesied that in the near future the death-rate from the removal of fibroids will be reduced to an equality with that of the removal of ovarian cysts.

Operative Treatment of Fibroid Tumors of the Uterus.—Dr. Franklin H. Martin, of Chicago, then read a paper on this subject, in which he made a summary report of six previously published cases, and a first report of two recent cases, of his new operation for fibroids. Following are the conclusions of the paper:

1. In hysterectomy we have an operation which is bearing the test of time well; in selected cases in the hands of well-trained men it is the only absolute cure yet demonstrated for a certain class of fibroids.

2. The objections to hysterectomy as a cure for fibroids are the long training necessary to safely equip an abdominal surgeon for this most formidable of pelvic operations, the great death-rate of this operation in the hands of the tyro, the long prostration, accompanied frequently with nervous symptoms, following otherwise successful hysterectomies, its inapplicableness to extremely exsanguinated and otherwise reduced patients, and finally its inevitable death-rate of at least five per cent. in the hands of expert surgeons.

3. Removal of the appendages as an operation for fibroids is usually unsatisfactory, and should not be resorted to ordinarily, except as a last resort in a complicated case where the abdomen has been opened for the purpose of removing the uterus, and the latter operation for some reason has proved impracticable.

4. If the appendages are removed for the purpose of establishing an artificial menopause, and for the purpose of reducing small fibroids by modifying their nutrition, make sure to include in the ligature the main channel of the ovarian artery.

5. Vaginal ligation of the base of the broad ligament for fibroid of the uterus is an operation still on trial. As far as we have history of cases to back the theories of the operation it has stood the test.

6. Vaginal ligation of the broad ligament is a minor operation from the stand-point of mortality, and it is a minor operation from the stand-point of immediate and remote shock to the patient. It can be performed on any patient without risk, in almost any condition of physical prostration or weakness, so long as she is capable of taking an anæsthetic.

7. The operation is prompt in saving blood. It succeeds in cutting off one-third more blood to the uterus than does the Battey-Tait operation. Theoretically and practically it immediately checks uterine hemorrhages,

and at once begins the diminishing of the myoma by depriving it of its nourishment.

8. The operation of ligation of the broad ligament does not leave an abdominal scar, does not unsex the woman, as do both hysterectomy and the Battey-Tait operation.

9. There are no good reasons why ligation of the broad ligament should not be an early procedure in all conditions of uncomplicated fibroids of the uterus in which the operation is practicable, even though in a few cases, subsequently, a more radical operation might be necessary.

10. The operation of vaginal ligation of the broad ligament is practicable in all interstitial or moderately subperitoneal fibroids in which it is possible by careful dissection to expose the base of the broad ligament high enough to include in a ligature the uterine artery and its branches.

Dr. R. E. Horton, of Illinois, opened the discussion on the papers of the afternoon, saying that we must be guided in the selection of the method by the condition of the case. He commended Dr. Martin's operation for controlling hemorrhage and starving small fibroids.

Dr. McCall, of Michigan, spoke of the President's method as an ideal one, but thought that in many cases it could not be done. He recommended the conservative method of Dr. Martin, whenever applicable and spoke of the excellent results he had had with this operation. He thought that the failures in the operation of the removal of the appendages were largely due to the fact that the ligatures were not placed deep enough and close enough to the uterus. It is well even to include the cornu of the uterus itself.

Dr. Lapthorne Smith, of Montreal, followed with a plea for the trial of electricity before more radical meas ures are resorted to. He believed in using the positive galvanic current and constitutional treatment for two or three months, and if the case showed no improvement then, operate. Of the operations, he preferred Dr. Mar tin's, in which there was no death-rate, to that which in the best of hands gave a mortality of five per cent. Only in extreme cases should the graver operations be resorted to.

Dr. McMonagle, of San Francisco, summarized the dangers of fibroids of the uterus under the heads of hemorrhage, pressure, and malignant degeneration. With regard to Dr. Martin's operation, he inquired, "Will the degeneration be simple or malignant?" The operation, he felt, was still *sub judice*. He had had the misfortune to see electricity continued so long as to change a fibroid into a sarcoma. He also asked Dr. Martin, "What if the woman should become pregnant?" also if a starving of the uterus might not result in degeneration of mucous membrane and septic infection. He suggested that as a preliminary to the operation the uterus be curetted and stuffed.

Dr. H. O. Marcy, of Boston, said that he had never used electricity that the patient did not feel benefited by it. He has discarded its use for fibroids. If patient is young and tumor small it is best treated by ligation of the vessels and removal of the appendages. If the growth is larger, removal of the appendages may fail. He spoke of the extra-abdominal treatment of the stump as not being ideal surgery. It was still resorted to simply because the experience of older men taught it to be safe. If surgery is aseptic, nothing is gained by this method. We simply confess that we are afraid of hemorrhage and infection.

Dr. E. E. Montgomery, of Philadelphia, thought that the removal of so large a quantity of blood as in Dr. Martin's operation might cause degeneration, sloughing, and danger of sepsis. He feared that the use of electricity might produce malignant degeneration.

In reply to a question put to Dr. Marcy, he said he had never seen malignant degeneration follow the use of electricity.

Dr. Smith said, in response to inquiry, that he never employed galvano puncture, as it contained an element of danger, and the use of electricity should be free from danger. He thought that the cases in which electricity was charged with causing malignancy were errors of diagnosis. He instanced a case in which a supposed fibroid, not improving by electricity, was operated upon, when it proved to be a sarcoma of the ovary in which the uterus was embedded.

Dr. Martin, in closing the discussion, said he wished to eradicate an impression left on the minds of some not acquainted with him. He did not believe that his operation was applicable to all cases. When the case demanded it he was as ready to open the abdomen as anyone. He said he never knew a case of malignant degeneration to follow the use of electricity, but, on the contrary, a case of bleeding sarcoma, pronounced such by one of the most eminent pathologists in the United States, had been cured by him by this method. He called the attention of the Section to Dr. Byford's operation of hysterectomy as one of the best.

With regard to the results feared from cutting off the blood-supply in his operation, he said that in his first operation he was moved by the same fears, and it was the least successful of his cases because it was not sufficiently thorough. While perhaps two-thirds of the blood-supply is cut off, there is still more than the normal amount going to the uterus. He thinks that pregnancy can take place, and come to a successful termination, and hopes to demonstrate this in the near future. He stated that as a preliminary to his operation he always curetted the uterus, so as to make a clear field for his vaginal wounds.

Dr. Eastman showed that gangrenous masses existed in some of the specimens of fibroids that he exhibited. He asked Dr. Martin how he could tell that these did not exist before tying the broad ligament. All methods are not applicable to all cases. If any one method is applicable to all, it is that of enucleation. He thought that if it was necessary to drain through the vagina at all, cut widely upon a staff and pack the cervical canal, or insert a tube surrounded with gauze. He protested against a drainage that did not thoroughly drain. He thought the strongest point in favor of the abdominal fixation method of the stump was that there was one wound instead of two.

Second Day, Wednesday, June 6th.

Placenta Prævia.—Dr. Llewellyn Eliot, of Washington, D. C., sent a paper with this title, in which he designated placenta prævia, next to puerperal convulsions, the most serious complication that can occur in the lying-in chamber. The physician is usually not called until hemorrhage has appeared. No woman should be allowed to suffer from these hemorrhages if the child is viable, for it is as easy to resuscitate a child at seven months as it is a child at nine that has been subjected to the weakening effects of repeated hemorrhages. He considered the proper procedure to be to forcibly dilate, turn, and deliver, the child acting as a tampon in controlling the hemorrhage. He would hesitate to resort to Cæsarean section.

Dr. Eschlemann, of Fresno, said that placentæ prævіæ were much more common occurrences than generally supposed, a large number of abortions being of this character, it being nature's method of getting rid of them. He objected to the forcible dilatation and introduction of the hand for the performance of version. All that is necessary is to dilate the cervix sufficiently to introduce a small forceps, seize the head, and, using it as a tampon, bring it down and deliver the child. The os is usually very dilatable, particularly if the hemorrhage has been severe.

Dr. McChesney, of Philadelphia, said that in a case of placenta prævia there is no time for nice distinctions. One must use what means he can to dilate the cervix, turn, and deliver. In reply to a question from Dr. Whitney, of Oregon, as to the procedure in placenta prævia

centralis, he said the finger of the hand should be passed rapidly through the placental mass and then proceed as in a case of lateralis. Hemorrhage after delivery is checked by copious injections of hot water, massage, and ergot, or ergot and strychnine hypodermically or by the mouth.

Dr. Martin, of Chicago, said that it had been noticed formerly that fever had invariably followed the delivery of women in cases in which it had been necessary to introduce the hand into the uterus. We know now the cause of this. As much care should be taken in preparing the hands preliminary to introduction into the cervical canal and uterus as for a case of laparotomy. He recommended for this purpose saturated solution of permanganate of potash and oxalic acid, as used at Johns Hopkins.

Dr. Montgomery, of Philadelphia, believed that placenta prævia was the one condition in which the life of the child should not be considered. In central placenta prævia hemorrhage usually begins about the fifth month. The patient may have a fatal hemorrhage at any moment. As soon as the diagnosis is established, the uterine contents should be evacuated. When there is lateral implantation and the hemorrhage slight and later, we may temporize; but even in these cases it is well to bring on premature labor. The speaker did not think Cæsarean section necessary or advisable.

Dr. Newman, of Chicago, thought that dilatation, version, and delivery was the best and safest method. The case should be treated strictly on surgical principles. With regard to the use of an anæsthetic, he would hesitate to use chloroform after an extreme hemorrhage. He thought better work was done with the use of an anæsthetic, and ether was safe.

Dr. E. M. Westley, of California, has adopted different methods. If the patient is exsanguineous when the physician arrives, the life of the child cannot be considered. At once detach the placenta and bring it down; bring down the head of the child and deliver. If hemorrhage is slight and child alive, he preferred version before delivery.

Dr. Eshlemann, of California, emphasized the fact that in turning it was necessary to dilate the cervix to the size of the physician's hand, and run all the risk of septic infection. In introducing the forceps according to his method a dilatation of an inch was sufficient.

Dr. Carpenter, of Pennsylvania, reported that he had had three cases lately. In two he applied the forceps high up after getting head into position by external manipulation. He then brought the head down so as to compress the placenta, which had previously been pushed to one side. In one case he held the forceps in place one half hour before dilatation was accomplished. The patients were sustained by hypodermic injections of whiskey and strychnine. In the third case, one of central implantation, he found the patient moribund when he arrived. He tore through the placenta and found a foot, which he seized, and delivered the child as soon as possible. The patient died. With the hemorrhage controlled, the physician can afford to wait, and he believed that had he been less hurried in his procedure, and had improved the delay by the administration of proper stimulants he might have saved his patient.

Tetanus Puerperium.—Dr. Allison Maxwell, of Indianapolis, sent a paper with this title, in which he gave the clinical history of a case of this rare disease that had occurred recently in his practice. He reviewed the etiology of the disease and recommended in its treatment, besides prophylactic measures, the use of antispasmodics and antitoxines.

Dr. McChesney, of Philadelphia, in discussing this paper, said that the offending cause was some kind of dirt. The disease presupposed some kind of infection, and should have directed against it local treatment aimed toward its removal. He had had a case in which the initial symptoms of tetanus had appeared. He used an intra-uterine douche of a two-quart 1 to 3,000 bichloride solution, every eight hours, following this by water which had been recently boiled. He used at the same time hypodermic injections of peptonized milk.

Private Hospitals.—The President replied to some remarks made in the Surgical Section reflecting upon private hospitals and their owners. He said that the attack upon private hospitals struck at the very life of abdominal surgery. It was in a private hospital that it was born, nourished, and grew to full developed man hood. He resented the imputation that surgeons would be dishonest and use the private hospitals as a means of gain by retaining patients after the need of such retention had ceased.

Third Day, Thursday, June 7th.

Obstetrical Forceps.—Dr. Briggs, of Sacramento, read a paper on the "Function and Form of Obstetrical Forceps," using in demonstration instruments invented by himself.

Mrs. E. S. Meade, M. D., of San José, in discussing these forceps, said that they presented an anatomical defect, the pelvic curve was wanting. She thought the instrument too complicated. Great force was not necessary in delivering a child with instruments. She applied the forceps, used traction during pain, and readjusted the instruments as it might be necessary during the intervals of pain. Sometimes as long as half an hour would be necessary to accomplish the delivery. Too often physicians thought only of quick work without considering whether the mother and child were wounded. She considered that it was impatience and lack of anatomical knowledge that destroyed so many uteri and perinæums.

Dr. Oscar Mayer, of San Francisco, thought the complicated nature of the instruments was opposed to the principles of obstetrical asepsis.

Dr. Winterberg, of San Francisco, thought it a very easy matter to find an obstetrical case in which this and all other necessary instruments can be placed, and the whole thoroughly sterilized by subjecting to the necessary heat.

Dr. Brown, of Mendocino, Cal., objected to the forceps because they lacked the proper curve.

Dr. Briggs, in closing the discussion, said that the curve was greater than it seemed, being equal to three inches. It appeared less than this because the handle was parallel to the axes of the blade, while in the ordinary forceps it formed an angle.

Massage in Gynecology.—Dr. Oscar J. Mayer, of San Francisco, read a paper upon "Massage in Gynecology." He said the object of uterine massage is to bring about a healthier state of the circulation and to impart tone to the various structures of the genital tract. It is indicated in all disorders of chronic inflammation, as well as in such diseases as cause uterine displacements, produced by relaxation of the ligaments or by pelvic exudation, with or without adhesion. It is very important to form a correct diagnosis of the disease and to exclude all pyogenic disorders. The speaker then went into a description of the various methods employed and the indication for the employment of particular methods. The indications for massage in gynecology are the same as those for massage in surgery. He said, By massage treatment we wish to produce: 1. Acceleration of the absorption and retrogression of inflammatory and traumatic exudation and deposits. 2. Stretching, loosening, disintegrating, cicatricial, or hypertrophied connective tissues, caused by inflammatory processes. 3. Stimulation of the circulation and restoration of the normal elasticity and tone in (*a*) contracted, hardened, and hypertrophic tissues, or (*b*) relaxed tissues.

The sphere of usefulness may be tabulated as follows: 1. Pelvic exudations and hemorrhagic infiltrations. 2. Chronic parametritis and perimetritis. 3. Retroversio uteri. 4. Chronic metritis. 5. Prolapsus of the uterus and vagina.

Massage is contra-indicated in all diseases of the genital

tract requiring perfect rest of the whole body or of the genital tract alone.

The best and quickest cures from massage are observed in chronic diseases following the puerperal state. A longer time is required in diseases following acute inflammatory processes, also when coincident with anomalies of position of the pelvic organs, especially in retro derivations of the uterus. Even if we do not succeed in some cases in restoring the uterus to its exact normal position we can obtain a symptomatic cure without recourse to surgical procedure. The combination of massage with electricity is to be recommended in the relaxations of the supports of the uterus, provided the structures are intact.

By exercising proper circumspection we can often achieve more by alternating massage treatment with other treatments than by long-continued massage.

In conclusion, Dr. Mayer said that massage does not set up for itself the claim that it constitutes an independent and sufficient form of treatment. It is only a mechanical therapeutic agent, intended to be used in combination with other tried and accepted remedies in effecting a permanent cure, or in considerably lessening the time formerly required therefor. American gynecologists have been somewhat slow in accepting massage as a new remedial agent to be employed in diseases of women, and have been suspicious of the beneficial results that have been claimed for it. But the encouraging reports of European authorities, many of them erstwhile bitter opponents of massage, are favorable beyond the expectations of the most sanguine, and must work a change in this American sentiment.

Dr. J. H. Barbat, of San Francisco, bore testimony to the great good he had seen accomplished by massage, combined with electricity and glycerine tampons, even in cases when the removal of the ovaries had been recommended by competent physicians. He looked upon massage as one of the greatest remedial agents of the day.

Dr. Shuey, of Oakland, Cal., said that she had used massage in the painful menstruation of young women with the result of perfect relief from pain. They were cases of long standing, where none but medicinal treatment had been tried. She used the massage every day for three or four weeks, and during the menstrual period for three or four months afterward.

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Twenty-eighth Annual Meeting, held at Lake Hopatcong, June 26 and 27, 1894.

John G. Ryerson, M.D., President, in the Chair.

Reports.—Dr. Stephen Pierson, Chairman of the Committee of Arrangements, read an interesting programme. The report of the Treasurer, Dr. Baldwin, showed a balance of over four thousand dollars. Dr. D. C. English said the Committee on Ethics had had nothing to do. The Committee on Honorary Membership made the following report:

The only name presented at the last meeting was that of our Recording Secretary, Dr. William Pierson, and in recommending him to the Society for election as honorary member, your committee take pleasure in referring to his twenty seven years' consecutive service, during which he has so faithfully and honorably discharged the arduous duties of that office; and although he was unanimously tendered the position of Third Vice-President by the Nominating Committee at the last session of this Society, he declined the honor, preferring to remain at his post and continue in the office over which he and his honored father have for over half a century presided.

A standing vote was taken, none voting in the negative.

The Health of New Jersey.—Dr. D. C. English read the report of the Standing Committee, which included an abstract of reports from physicians in the different parts of the State as to contagious and other diseases. It appeared the year had been a healthy one, there having been less of malaria, of diphtheria, scarlet fever, and other infectious diseases. In one or two places where diphtheria and typhoid had occurred, they had been traced to the milk-supply. Variola had been promptly suppressed, cholera had been kept out, the local health boards had shown more than usual activity. The organization in Essex County for a pure milk-supply had been successful, and promised to be of marked service in preventing the spread of tuberculosis, diphtheria, etc.

Prevention of Blindness.—Dr. W. B. Johnson read the report of the Committee on the Prevention of Blindness through Legislative Enactment. The movement to prevent blindness by legislative enactment had originated in New York State, and laws had been enacted in that State, and perhaps half a dozen others. They were based on the fact that blindness was due chiefly to contagious ophthalmia, and looked to the cure of this and prevention of its spread to others through use of towels, etc. The ophthalmia of the newly-born caused about ten per cent. of all cases of blindness, and made it imperative that the midwife should report cases at once in order that they might receive timely treatment, especially that known as Crede's by way of prophylaxis—washing the eyes immediately after delivery and dropping into them from the pipette two per cent. solution of nitrate of silver. On motion, the committee was continued and legislation urged.

Dr. William Perry Watson thought the license of midwives should be taken from them when they failed to report cases of ophthalmia neonatorum.

Report of Committee on Bovine Tuberculosis.—Dr. J. W. Stickler, Chairman of the Committee, made the report. He said the committee had supposed, when it went before the Legislature, that everybody was aware that tuberculosis existed in animals, and was likely to be transferred to man through milk and flesh. But they were mistaken, and were surprised to encounter not a little antagonism to legislation in the matter, and particularly against the bill which the committee had prepared as an efficient one; so that instead of adopting this bill another became law, which on account of its laxity would probably prove quite useless in the suppression of tuberculosis among cattle.

Dr. A. E. Conrow said it was necessary to have the co-operation of the farmers and the dairymen as far as possible, and therefore the bill which had been passed met with his approval until a more radical law could be enacted.

On motion the committee was continued, Dr. Conrow's name being added.

The Permanent Fund.—Since 1868 the Society had been accumulating a permanent fund, the interest on which, as the Treasurer, Dr. Baldwin, stated, was to be used for the publication of the yearly "Transactions." The sum had now risen to over four thousand dollars. Motions had been made from time to time to divert this fund to some other purpose, especially to the Society for the Widows and Orphans of Medical Men, which had no direct relations with the Medical Society. Dr. Ill had proposed a change in the by law, turning the amount of the permanent fund over to the society referred to, and making the members of the State Medical Society also members of the other. Drs. Skinner Lielbach, and others spoke eloquently in favor, while Dr. Baldwin took the lead in opposition. The change was rejected.

President's Address.—Dr. J. G. Ryerson, of Boonton, chose for the subject of his address, "Chronic Nephritis and Lactose." The following were some of the facts mentioned in relation to chronic nephritis, as leading up to the question of a special form of treatment, which in his experience had given remarkable results.

The profession generally, he said, did not realize fully the frequency of interstitial or cirrhotic kidney disease, nor its distinct pathology, its well-marked symptoms, its better prognosis under judicious treatment. In a fair amount of general practice Dr. Ryerson had, within a

little more than two years, met with thirty-three cases of chronic nephritis, twenty-nine of which he had diagnosed as cirrhotic. The diagnosis was frequently not made, because the symptoms were mistakenly attributed to disease of other organs, which, if affected at all, were affected only secondarily. Among the complications were heart disease, pulmonary disease, pleurisy, pneumonia, emphysema, bronchitis. The agents through which the different organs became affected was probably excess of one or more of the normal excretions of the kidney present in the blood. Increased action was demanded of the kidneys for its elimination, which called for increased force in circulation, the coats of the arteries in the kidneys became affected first, then elsewhere in the body. Incidentally, the President expressed disbelief in the view that men were more often affected than women, and that alcoholic drink was a common cause. His statistics pointed in the opposite direction.

Without considering the large number of symptoms he wound say that an increase in the quantity of urine with low specific gravity, pain in the head, loss of flesh and strength without apparent cause, were symptoms which should direct attention to the kidneys. If there should be frequent headache, palpitation and dyspnœa, general dulness, and disturbance of vision the diagnosis should be clear.

Dr. Ryerson had first used lactose in milk, and after learning that the beneficial effects were due to the lactose, he had during the past three years given this alone, and had found it much more efficient than in natural combination. This was a point on which stress was laid. He had now used lactose in 33 cases of chronic kidney disease in which he felt confident of his diagnosis, 30 having been cases of the cirrhotic kidney. Fourteen had previously been treated by other physicians, and in 11 the diagnosis had also been made previously. Emaciation was noticed in 27, insomnia in 28, dyspnœa in 24, pain in the head in 27, emphysema in 11, heart complications in 13, the urine was examined in 22, and albumin was found in 8, the average age was 53, males 13, females 20. Six patients had since died, and symptoms had returned after treatment in 7. He had also been furnished with notes of 13 cases treated by lactose by other physicians. In 36 cases of the total number lactose was the only treatment, in the others it was the only treatment of importance. Lactose was given in doses of from twenty to fifty grains. The average duration of the disease had been fifteen months. The points of interest in the treatment of chronic Bright's disease by lactose might be summed up as follows: Uniform certainty of effect; promptness of action; permanency of improvement; value in diagnosis; smallness of dose required; benefit not due to diuretic action; difference in effect of lactose taken in natural combination and taken as he recommended, in the free state. Forty three of the 46 cases were markedly benefited, all but 7 within three days. In 4 of the 7 in which the symptoms returned, relief was again obtained by lactose. In the 43 there was no return of the symptoms—so far as could be learned—within six months. In no cases was as much as three drachms of lactose prescribed in one day. The action of the remedy, he thought, lay beyond the kidneys, probably in the blood.

Erysipelas as a Complication in Abdominal Surgery.—Dr. George H. Balleray, of Paterson, described in this paper three cases of erysipelas, involving the abdominal wound, in patients operated upon by him some years ago, in the old building of the Paterson Hospital, the origin of the infection not being known, although two of the patients gave what might be called a history of predisposition to the disease. All recovered. Incidentally the author expressed preference for strict cleanliness in contradistinction to antisepsis during operations, and was apparently justified in his preference by the results of Mr. Bantock, compared with Mr. Thornton's, who worked in the same hospital.

Medico-legal Aspect of Abortion.—A committee was appointed upon this subject, consisting of Drs. Stickler, Baldwin, and C. A. Adams.

Observations on Cases of Movable Kidney.—Dr. H. G. Wetherill, in this paper, expressed preference for the incision parallel to the last rib, impressed the advantage of operating with the patient lying prone, cylindrical air-cushion under the abdomen to push up the kidney, gave preference to Dr. Edebohl's method of anchoring the kidney, and cautioned against the use of silk, lest abscess develop and lead to final destruction of the organ, if not to fatal sepsis.

The paper was discussed by Drs. Rogers, Chandler, and Balleray.

Angina Pectoris.—The subject for discussion presented at the last annual meeting related to angina pectoris, its true pathology, and an explanation of its sudden termination in death. The gentlemen who were to open the discussion were not present, but Dr. Baldwin related an interesting recent case of death in the first attack. The man had been in good health, ran violently some hundred feet, felt nauseated and faint, was assisted to his room, complained of pain and weight in both arms, and a feeling of depression, but there was no evidence of spasm. This was in the morning; he was relieved, but in the evening, while sitting up, he fell back dead. Post-mortem was not obtained. Dr. Baldwin thought obstruction of the coronary arteries had much to do with angina pectoris; also affection of the cardiac nerve supply, especially in sudden death.

Dr. Rogers and Dr. Cooper also made some remarks.

To Confer with the Pharmacists.—Delegates to corresponding societies presented their reports. Dr. Coit, who had attended the meeting of the New Jersey Pharmaceutical Society, offered a resolution, asking for the appointment of a committee of three to meet a like committee from the Pharmaceutical Society, to formulate some plan which might lead to more rational therapeutics and pharmacy.

Dr. Reynolds, of the Pharmaceutical Society, read a paper which went to show the necessity for closer relations between the pharmacist and physician, and between the two State Societies. The committee was appointed, and consisted of Drs. Coit, Silver, and Lewis.

Catarrh of the Upper Air-passages.—The Third Vice-president, Dr. T. J. Smith, read a somewhat exhaustive paper upon this subject. It was briefly discussed by Dr. W. B. Johnson.

The Code of Ethics.—Dr. George T. Welch, Chairman of the Committee appointed to consider the proposed revision of the Code of Ethics of the American Medical Association, said the committee had sent a circular to the district societies, and of eight which had replied before the recent meeting of the American Medical Association, six were in favor of the old Code, two thought it required modification. Since the American Medical Association had already taken action, sustaining the old Code, Dr. Welch hoped the report would be received without discussion and the committee discharged. His wish was granted by vote, but Dr. Barker asked, and finally obtained, consent to offer some resolutions re-affirming the Society's allegiance to the Code, and read a paper in argument therefor. The resolutions were almost unanimously adopted.

Action on the amendments to the by-laws, proposed at the last annual meeting, was deferred another year.

According to the report of the Committee on Prize Essays (prize of one hundred dollars), this Society, like many others, has to do much urging in order to bring out papers in competition. None had been offered in years.

Officers.—*President*, O. H. Sproul; *First Vice-President*, William Elmer; *Second Vice-President*, T. J. Smith; *Third Vice President*, D. C. English; *Recording Secretary*, William Pierson; *Corresponding Secretary*, E. L. A. Godfrey; *Treasurer*, Archibald Mercer; *Standing Committee*, H. W. Elmer, William H. Iszard, Henry Mitchell; *Committee of Arrangements*, G. E. Reading,

James Mercer, V. M. D. Marcy, L. M. Halsey, B. S. Lewis; *Business Committee*, H. R. Baldwin, W. B. Johnson, G. Van Wagenen, E. L. B. Godfrey, Updyke Selover.

Place of meeting, Cape May; time, June 25 and 26, 1895.

SECTION IN SURGERY.

First Day, Tuesday, June 5th.

Chairman's Address.—Dr. John B. Roberts, of Philadelphia, said that operative madness is rife in our day. This madness is endemic among those whose preliminary training has been deficient. Preliminary education is a corrective, and a reaction is fast taking place. A true surgeon, possessed of a thorough pathological knowledge, must be a man of broad culture and have had an adequate preliminary education. Surgeons should be careful to make accurate statements and to refrain from criticising others. A great surgical sin is the overlooking of the influence of the nervous system upon disease. The speaker condemned the evil of physicians controlling private hospitals. Such an institution is a hotel for patients, and of course those interested are tempted to strive to keep it filled with long-staying guests. The sin of charging large fees was also condemned. A man who refuses his counsel to a brother practitioner because the patient is poor, commits another sin, as also does the one who charges for services rendered to a physician or his family. The use of secret nostrums was denounced as unscientific.

Malignant Neoplasms from a Micro-technical Standpoint.—Dr. A. P. Ohlmacher, of Chicago, said that many things are described as cancer parasites because this subject has been handled unscientifically. A great number of reagents have been used, hence the diversity of results, since artificial products are formed by the reagents. It has been found that sporozoa treated by different fixing solutions act differently. Some agents distorted the spores and interfered with the subsequent staining. All the present methods of investigation are faulty, and no results are to be looked for until new methods are devised.

Early Surgical Interference in Malignant Tumors.—Dr. R. A. McLean, of San Francisco, Cal., said that malignancy once established, removal must be immediate. Recurrence is frequent because the laity delay until the case is hopeless.

The causes of failure in operation are: The size of the growth, infiltration, metastases, ulceration, exhaustion, and septicæmia. The great mistake is in not insisting on a radical operation. A temporizing policy is fatal. In suspected cases, carcinosis, tuberculosis, and syphilis are to be differentiated. Early in the case a small operation only is, as a rule, necessary. In operating take out as much as possible with safety, go well around the probable limits of infiltration. In carcinoma of the tongue or lip, take out the bone if eroded. In the extremities, amputate on the proximal side of the next articulation above the growth. Excision should be practised in all cases where general health is good.

The Value of Caustics in Malignant Growths.—Dr. John Parmenter, of Buffalo, said that many claims are made for caustics, to wit: That after their use recurrence is less frequent, that the various agents of this kind have a selective action, and that we may obtain a reduction in size of the enlarged lymphatics. These claims are not well grounded. The value of caustic lies in the selection of a proper agent and the selection of proper cases. A proper caustic is one which entirely destroys the diseased tissue, and it should be rapid in its action. Caustics must be used in conjunction with common-sense. Burn all the diseased tissue. Don't spread over too extensive a surface. Mitigate as much as possible the pain. Suitable cases are those located in a favorable anatomical situation, and those in which there is no involvement of the ymphatic glands.

Dr. L. Duncan Bulkley, of New York, said that caustics are used by quacks, still they have their use. They are indicated in (1) the early stages, and are useless after metastases, extensive ulceration, or glandular involvement have taken place. (2) In the formative period. (3) In epitheliomata in accessible regions.

The best form of caustic is a mixture of wheat flour, arsenic, cinnabar, ammonia muriate, mercury bichloride, and zinc chloride. Mild caustics are useless, and silver nitrate is of no value whatever.

Pyrogallic acid is serviceable after curetting.

The Radical Cure of Malignant Tumors by Operation.—Dr. J. H. Wythe, of Oakland, said that cancer is often removed as a palliative measure. Cure by removal can follow only when the growth is of local origin. Persistent removal after recurrence is often followed by permanent cure. Two principles are to be observed, namely, operate early, and remove a quantity of the neighboring tissue with the growth.

Dr. Morrison said that general practitioners should be able to recognize and also treat malignant growths. Caustics are useless, and we should always use the knife.

Dr. Shiels, referring to Dr. McLean's paper as regards differentiating between syphilis and malignancy by treatment, said it was not always possible, because some forms of gummata yield neither to iodides nor mercury.

Dr. Griswold, of Pennsylvania, recited a case where he operated simply to prolong life. Caustics should be used only when the patient positively refuses surgical measures.

Dr. Plane, of Michigan, thought that there was no means of making a prognosis in a large class of tumors.

Dr. J. W. Cottenhauer, of Iowa, made the claim that malignant tumors are never cured.

Dr. Bulkley, of New York, said caustics as commonly used are dangerous. He believed that a simple growth might be made malignant by the irritation of caustics.

Dr. Bishop, of Pennsylvania, appealed to the Section to take a decided stand in regard to caustics. We should never allow the patient to select the method of treatment.

Second Day, Wednesday, June 6th.

Discussion on Tubercular Joint Disease.—Dr. Emmet Rixford gave briefly the symptoms which are to be depended upon in the early recognition of this disease.

Dr. R. H. Sayre, of New York, laid much stress on the manner of applying the plaster cast in the treatment of joint disease. Interest was added to the paper by photographs displayed to illustrate the various methods.

Dr. S. Stillman, of San Francisco, followed with a paper on the "Treatment of Tubercular Joints by the Injection of Iodoform." He dwelt on the technique of the operation and on the location of the tubercular foci.

Concussion of the Brain.—Dr. L. C. Lane, of San Francisco, read a paper on this subject. After reviewing the history of the subject and giving a general *résumé* of the various theories brought forward in regard to the subject since 1840, he went on to explain why in most cases the diagnosis was easy, whereas in other cases most difficult, especially where there was no history of a blow or a fall upon the head.

He divided the cases into three general classes or grades: 1, The mild; 2, severe; and 3, the fatal cases.

As symptoms of the trouble he enumerated vertigo, faintness, weakness, drowsiness, and coma. The prognosis was dependent on the extent of the injury. As after-effects in some cases, he mentioned melancholia and mania.

Treatment of Fractures of the Lower End of the Humerus.—Dr. Allis sent a paper with this title. The main point brought out was the advantages to be derived from treating such injuries with the arm in extension and the patient in the recumbent posture. This facilitates the circulation of the blood, the examination of the part, and the renewal of the applied dressing.

Passive motion he said was only to be used in the latter half of the treatment. A lengthy discussion then followed, which was represented on the one side by Dr. Lane, who favored the method employed by Allis, and on the other side by Dr. Sayre, who favored the rectangular position.

Discussion on Hernia.—Dr. J. Ransohoff, of Cincinnati, O., emphasized the great importance of immediate operative interference in the case of the strangulated hernia, and the great danger to be apprehended from prolonged taxis which has a tendency to decrease the vitality of the gut, as well as to make the subsequent operative procedure less favorable in its results.

Dr. A. E Rockey, of Portland, Ore., then followed with a paper entitled "Observations on the Radical Cure of Inguinal Hernia." He advocated the idea of operative interference also in many cases of long standing and in cases where the hernia is very large.

Dr. H. O. Marcy, of Boston, advocated the use of kangaroo tendon in suturing, in preference to catgut. A lively discussion followed, which showed that there are still many adherents to the conservative method of treatment.

A Plea for the Better Teaching of Anatomy.—Dr. Schiel read a paper with this title, in which he said that among all medical studies, anatomy probably ranked first in importance. The lack of interest shown by students in the study of anatomy was, he thought, largely due to the methods of teaching. He also laid great stress on the evil results consequent upon a deficient education in this branch of medical science. These, he said, were not only meted out to the physician, but also to the patient, who falling into the hands of a practitioner with only a superficial knowledge of anatomy was like a lamb being led to the slaughter, unconscious of the danger which awaits him.

Third Day, Thursday, June 7th.

Symptoms and Treatment of Tumors of the Bladder.—Dr. C. F. Buckley, of San Francisco, read a paper which was mainly a detailed account of three cases of tumors of the bladder, produced in these patients undoubtedly by traumatisms of the perinæum. He indicated that in his opinion not enough attention was paid to injuries of this sort. Dr. Buckley also exhibited a slate pencil removed from the bladder of a male subject by the median operation; and a collection of gall-stones removed from the gall-bladder of a patient during life.

Pathology and Symptomology of Hemorrhoids, Anal Fistulæ, and Anal Fissure.—Dr. David Powell, of Marysville, Cal., read a paper with this title. Clinically he divided piles into external and internal, although their pathology is the same. The veins involved are the inferior and superior hemorrhoidal plexus. In their initial stage they are nothing more than dilated rectal veins. Later, characteristic changes take place and the tumor enlarges. As causes he enumerated fecal accumulations, the gravid uterus, or some obstruction to the hepatic circulation. The internal he classified into: 1, venous; 2, arterio-venous; and 3, the capillary. The speaker next took up the subject of anal fistula. This usually originates in an ulcer. It may also be caused by a thrombosis or tubercular foci which induces suppuration. This trouble he said was often not accompanied by any urgent symptoms.

The subject of anal fissure was next discussed. This, the speaker said, was a most important subject practically, not because of its pathology but rather because of the pain and annoyance which invariably accompany it. Among the characteristic symptoms he mentioned: Dull aching pain, aggravated by evacuation of the bowel. Morning diarrhœa, loss of blood, continual irritation of the genito urinary organs, and tender prostate. The constitutional disturbances are often marked. If trouble is unrelieved, patient becomes pale, anxious, and looks careworn.

Dr G. B. Somers, of San Francisco, said the treatment of anal fistula was by no means always a simple one on account of two complications: 1, cicatricial tissue was frequently found in the canal; and 2, collateral sinuses often existed, hindering the surgeon in his work. In most cases the fistula is preceded by an abscess, which may be either pyogenic or tubercular in origin, which imparts to the fistula its characteristic aspect.

Methods of treatment are mainly four: 1, by injection; 2, by ligation; 3, by Mathew's fistulatome; and 4, the radical operation by the knife. Dilatation of the sphincter, he said, should always precede the operation.

Dr. Thomas W. Huntington, of Sacramento, stated that anal fissure, though more common between the ages of twenty and thirty five, occurs at times during infantile life and in old age. It occurs as often in men as it does in women, a view not generally held up to this time.

The symptoms are morning diarrhœa, tenesmus, intense paroxysmal paralyzing pain quite out of proportion to the size of the ulcer.

There are two general methods of cure: 1, by dilatation of the sphincter; and 2, by incision. Incision always to be done under anæsthesia. The speaker favored the combined plan of incision and dilatation.

Treatment of Stricture of the Urethra.—Dr. Rosenstein gave briefly his experience with the employment of gradual dilatation and internal urethrotomy. In summing up he stated that he decidedly favored gradual dilatation, and that in his opinion internal urethrotomy will eventually be abandoned because of the dangers associated with the operation, and because, in his opinion, the cure after urethrotomy was not any more permanent than after gradual dilatation.

A lively and very interesting discussion now ensued.

Dr. Thomas, of Pennsylvania, said that in certain cases he decidedly favored internal urethrotomy, in others divulsion.

Dr. Huntington, of California, remarked that he rather favored internal urethrotomy, as gradual dilatation did not always cure the discharge.

Dr. Dodge, of Michigan, said he had seen worse reaction from the use of the sound than from internal urethrotomy.

A number of other physicians gave their opinions, by which it seemed to be the consensus of most present that internal urethrotomy was well adapted in many cases, and that it will always occupy a place in surgery.

It also was thought by many that the cure of stricture is not a permanent one, and that sounds have to be used at shorter or longer intervals to keep the stricture from again contracting.

Fourth Day, Friday, June 8th.

New Plastic Operation for Varicocele.—Dr. O. J. Mayer, of San Francisco, read the paper. The feature of the operation is the transverse suturing of the longitudinal wound, which method considerably shortens the scrotum. A case which had been operated on was presented.

Dr. Mayer then read a paper on a "Bloodless Vaginal Myectomy." The essential step in the operation being the temporary ligation of the uterine arteries.

Acetanilid in Medicine and Surgery.—Dr. G. W. Woods, of the United States Navy, Mare Island, California, read a paper in which he gave a brief account of the preparation and composition of acetanilid. Antifebrin, he said, was simply another name for acetanilid. It is a good antipyretic and not poisonous if given in small doses at the commencement, even to children. It acts slowly and is both a diaphoretic and diuretic. It may be given in any and all fevers and inflammations. It is a good substitute for iodoform in venereal sores. The only thing experienced on its application to a granulating surface is a burning sensation, which, however, persists only a short time. It is useful in the dressing of all forms of burns, ulcers, moist eczema, gunshot wounds, abscesses, etc. When applied to extensive granulating surfaces it sometimes pro-

duces cyanosis, which is not due to a disturbance of circulation, but to a deficient oxygenation of the blood. To sum up, the speaker said, acetanilid is exceedingly useful because it is cleanly, odorless, antiseptic, desiccating, practically non-toxic, does not crust, is easily removed, insignificant cost, not altered by moisture.

Contagious Period of Syphilis.—Dr. Thomas, of Pennsylvania, emphasized the fact that he was perfectly convinced that syphilis is only contagious in the primary and secondary stages, that is only for three to four years after the primary lesion.

Dr. Schiels reported a case of multiple, symmetrical, bilateral lipomata. The lipomata were not limited to any particular part of the body, but occupied positions from the neck down to the groin.

The Surgical Engine.—Dr. Bonnwell, of Philadelphia, Penn., then read a paper on this engine, which was, he said, very similar to the ordinary dental engine. It caused the trephine or burr to revolve from a hundred to twenty thousand times a minute. It is said to be adapted to the performance of all sorts of surgical operations, on both the soft parts and bony tissue.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 14, 1894.

George C. Freeborn, M.D., President, in the Chair.

Rupture of the Liver.—Dr. E. Hodenpyl presented the specimen. There was extensive laceration of the organ due to an injury, yet death did not occur for three weeks, and was then due to peritonitis and septic infection. The patient was said to have had a kick from a horse, yet he received practically no attention until about three weeks later, when he reached the hospital after a ride in a street-car and a short walk. He was much exhausted at the time of admission, and died two hours later. At the autopsy the body was found to be emaciated. There was no external sign of injury, and no fracture of the ribs or vertebræ. There was an intense peritonitis with connective tissue bands uniting the coils of intestine. Behind the intestine, on either side of the vertebral column, were two large collections of stinking blood—at least two quarts on either side. The whole of the right lateral border of the liver was torn away, and the right lobe was exceedingly friable, so that a dull probe could be inserted into the liver tissue for at least six inches. The fact that the man survived the injury so long was very remarkable, for most cases of rupture of the liver prove fatal within a few hours, from hemorrhage.

Sub-phrenic Abscess.—Dr. Hodenpyl also presented a specimen of sub phrenic abscess. It had apparently resulted from a perforation of the gall-bladder. The subject was a man twenty-three years of age, who had been excessively intemperate. In the winter of 1892 he had severe colicky pains in the region of the umbilicus, lasting for three weeks. The present illness began on December 10th, with a nearly constant pain referred to the umbilicus and upper abdominal region. Two days later he noticed the abdomen beginning to swell, and ever since then it had steadily increased in size. On admission he was well nourished, and very slightly jaundiced. There was some swelling of the feet and limbs; the abdomen was considerably distended, but there was no fluctuation; the temperature was 100° F.; pulse, 112; respirations, 24; urine normal. Physical examination showed flatness over the lower part of the right lung, beginning at the third space, and some dulness posteriorly over the left lung. The heart was normal; splenic dulness not increased. On December 22d paracentesis abdominis was performed, and 166 ounces of slightly turbid reddish brown fluid were withdrawn. This gave marked though temporary relief. On December 25th a needle was inserted into the right chest posteriorly and some bloody serum drawn off, and on the following day paracentesis was again performed. Some reddish-brown fluid was evacuated, and this gave a distinct bile reaction. On December 27th a four-inch vertical incision in the right lumbar region was made, about the level of the umbilicus, and on cutting through the abdominal muscles and peritoneum about two and a half litres of clear brownish fluid escaped. The incision was enlarged and disclosed a cavity of considerable size. There was a well marked line binding together the intestines and separating them from the peritoneal cavity. In the upper part of the incision was a rounded cicatrix half an inch in diameter. The wound was packed. After two days the patient developed diarrhœa with some blood in the stools, and on January 16th he died. No complete autopsy was permitted, but the liver was removed through the abdominal wound. Over the whole right lobe, posteriorly, was a large collection of fibrin and pus immediately beneath the diaphragm. Over the whole lower lobe of the right lung was a rather thick coating of fibrin and pus. There was an intense peritonitis with organized adhesions. The gall-bladder showed a circular opening about the size of the little finger with rounded edges. This might have been ante-mortem or due to the necessarily forcible extraction of the liver.

The speaker said that in most of the cases of sub phrenic abscess that had been reported, the condition was due to the extension of a pleuritis, but in this he thought it was rather due to rupture of the gall-bladder.

Carcinoma of the Stomach.—Dr. Hodenpyl next presented a specimen of the above. It was removed from a man, fifty years of age, who had suffered for a number of years with phthisis. For the last year of his life there were marked gastric symptoms, particularly vomiting of "coffee-ground" material. He was so much emaciated that the tumor could be easily felt on palpation of the abdomen. There was not much stricture of the pylorus, but just above this point was an ulcer one and one-half inch in diameter and one inch deep. There were several large capillaries in the base of this ulcer, from which the hemorrhage probably occurred.

Dr. George P. Biggs said that last spring he had presented to the Society a specimen not unlike the one of sub phrenic abscess just exhibited. In his specimen there was a large calculus having the shape of the interior of the gall-bladder, and lodged in the common and hepatic ducts. There was one quite large ulcer and several small ones in the fundus of the gall-bladder, and several collections of pus around the gall-bladder with perforation into the pleural cavity.

Sarcoma of the Tongue.—Dr. E. K. Dunham presented this. It had been removed by operation, by Dr. Joseph D. Bryant, from a man sixty-one years of age, whose family history was negative, except that several of the members of the family had died of tuberculosis. The man was somewhat alcoholic in his habits, and was accustomed to smoke ten pipes of tobacco a day, using a briar-wood pipe. About eight months ago he bit his tongue on the right side, one inch from the tip, causing a blister, which by contact with a rough tooth became irritated. A tumor slowly grew on this spot, and when first seen was three-fourths of an inch in diameter. On microscopical examination the structure of the tumor appeared to be that of a large round-cell sarcoma. The speaker said that the literature of the subject was very meagre. Max Schreier, in the *Klinische Wochenschrift* for June, 1892, reported several cases. He also recorded two cases in which there was an anatomical diagnosis of sarcoma of the tongue, but in which no clinical history was obtainable. In the cases which he cited the majority were at the back of the tongue, and most of them were either small round cell, spindle-cell, mixed-cell, or lympho-sarcomata. The only large round cell sarcoma reported was one by Mercier in 1890, situated near the tip of the tongue on its dorsal surface. It was a fungous growth attached to the tongue by a thick pedicle, and was made up of large round cells, some of which were multi nucleated, with a small amount of intercellular stroma which could be more or less distinctly traced from the connective tissue surrounding the tumor. In that

case, as in the one just presented, there was no ulceration around the tumor; the epithelium was intact, and showed no tendency to involve the underlying tissues.

Dr. T. M. Prudden said that the specimen seemed to be undoubtedly one of sarcoma, perhaps of the kind sometimes called angio-sarcoma. He had seen three or four small sarcomata of the tongue, all of the spindle-cell or small round-cell variety. The specimen exhibited under the microscope was so beautiful, he would like to ask how it had been hardened.

Dr. Dunham replied that the whole tumor was first hardened in a saturated solution of bichloride for five hours; then in seventy per cent. alcohol containing some iodide of potassium, and then successively in eighty per cent., ninety-five per cent., and absolute alcohol. The section was cut in paraffin.

Typhoid Fever with Extensive Ulceration.—Dr. George P. Biggs presented a supplementary report on the case of typhoid fever with extensive ulceration of the cæcum which he had presented some time ago to the Society. Cultures from the spleen showed bacilli possessing all the morphological and biological characters of typhoid bacilli, including the growth on potato. Cultures from the peritoneal exudate showed the streptococcus pyogenes very abundant, with bacilli which had apparently the characteristics of the colon bacillus, including the development of bubbles of gas in cane sugar bouillon.

Pulmonary Thrombosis and Infarctions.—Dr. George P. Biggs also presented a supplementary report on this recent case. It was one of dilated heart with multiple pulmonary thrombi and infarctions. The areas in the lung showed the ordinary structure of hemorrhagic infarctions, and branches of many of the pulmonary arteries showed distinct endarteritis. The lesion most frequently seen in the sections was a fibrous thickening of the intima with slight narrowing of the lumen; distinct obliterating endarteritis was occasionally seen. The media and adventitia of some of the vessels contained a few small round cells. The vessels of the liver and kidneys appeared to be normal. It was rather interesting to note the absence of any gross evidence of arterial disease, and the evidence microscopically of slight, but distinct, changes apparently limited to the pulmonary arteries. The arterial disease, with the marked enfeeblement of the circulation present in the case, fully accounted for the thrombi, and apparently for their presence only in the lung.

In connection with that case the speaker reported one presenting very similar lesions. A woman, forty years of age, had had for several years more or less palpitation, dyspnœa, and œdema of the legs. She had never had rheumatism. Five months before death she had severe headache, cough, vomiting, dyspnœa, and dimness of vision, soon followed by œdema of the feet. The urine became scanty and high-colored. On admission, the temperature was 101° F., respirations, 40, and the pulse, 108; there were many subcrepitant râles over the lung posteriorly. The apex beat was in the fifth space, 5½ inches to the left of the median line. A faint systolic murmur was heard at the apex; the heart action was regular and of fair force, and the pulse had a high tension. The liver extended from the fifth space to the level of the umbilicus. A moderate quantity of fluid was detected in the peritoneal cavity, and there was marked œdema of the lower extremities. Examination of the urine showed it to have a specific gravity of 1.014, and to contain from ten to twenty per cent. of albumin, with many casts. Twenty to twenty-five ounces of urine were voided daily. She was under observation in the New York Hospital for two months, during which time the dyspnœa, vomiting, headache, and scanty urine were the prominent symptoms. During the last ten days of her sickness there was cough with moderate bloody expectoration. At the autopsy it was noted that she was an extremely obese subject, the fat in the abdominal walls being 7 ctm. in thickness. Many old pleuritic adhesions were found, and also a moderate increase in the pericardial fluid. The heart was considerably hypertrophied, but predominantly dilated. All the cavities were distended with post-mortem clots; all the valves were normal; the muscular substance was pale, but fairly firm. The coronary arteries and the aorta were slightly atheromatous. There was a thin thrombus, 1 ctm. in diameter, at the junction of the transverse and descending portions of the arch of the aorta. There were no ante-mortem thrombi in the heart itself. In the left lung ante-mortem thrombi were found in many of the larger branches of the pulmonary artery in both lobes. Many of these thrombi nearly occluded the vessels, but there were no infarctions except two small ones in the anterior border of the base, 1½ ctm. in diameter. In the right lung there were large thrombi in the main subdivisions of the pulmonary artery, and multiple small infarctions scattered through the upper and lower lobes. The largest, which was in the posterior part of the lower lobe, measured 4 ctm. in diameter. The lungs were generally congested and œdematous. In the common iliac and femoral veins were large thrombi apparently completely occluding the vessels. The kidneys showed advanced chronic diffuse nephritis. It was quite possible that some of the infarctions came from emboli in the femoral vessels.

Typhus or Typhoid Fever?—Dr. George P. Biggs then presented specimens from a case seen first at the Reception Hospital, and then at the Riverside Hospital. The patient was an Austrian, twenty one years of age, who when admitted to the Reception Hospital had a temperature of 105° F., with a moderately profuse eruption which was regarded as that of typhus fever. He said he had been sick for three days. The patient was under observation for eighteen days, and the history was furnished by Dr. S. D. Hubbard, of the Riverside Hospital. The temperature for the first three days was between 105° and 106° F., and, during the following eleven days, it ranged between 106° and 103°, the average being 105° F. During the last four days it fell gradually from 103° to 100°, the average being 102° F. His pulse for the corresponding periods was 120 to 124, then 100, then 80, and during the last few days 124. The respirations varied between 26 and 36 during the entire time. Low, muttering delirium was noted on the sixth day of the disease, and was frequently present throughout the course of the disease, especially at night. The eruption was at first macular, but by the ninth day it became petechial. The countenance was dull and dusky, and the eyes were congested. The spleen was enlarged throughout the course of the disease. There were signs of obstruction of the dorsalis pedis artery two days before death. At the autopsy it was noted that he was extremely emaciated, and that rigor mortis was well marked. The toes of the left foot were of a pinkish-red color, owing to the obstruction of the artery. The serous membranes were all normal. The heart was distended with post-mortem clots. Attached to the inner surface of the lower half of the anterior wall of the left ventricle were many firm grayish ante-mortem clots, forming a mass about the size of a hen's egg. The ventricular wall corresponding to the attachment of these thrombi was only 1 ctm. in thickness, while at the base it was 2 ctm. thick. There seemed to be no explanation for these variations in thickness of the wall. The muscular substance was pale and moderately soft. The valves were all normal. No ante-mortem clots were found in the heart, except in the left ventricle. The coronary arteries and aorta were very slightly atheromatous. The lungs showed marked bronchitis, but no thrombi or infarctions. The spleen was about four times its normal size, was of a dark-red color, and contained an infarction in the posterior portion, 4 ctm. in diameter, and two others in the anterior portion, somewhat smaller. The mesenteric glands were distinctly enlarged, measuring 1 to 1½ ctm. in diameter. The kidneys were excessively anæmic, and their parenchyma degenerated. In the left one was an infarction, 4 ctm. in diameter. The

liver was soft and pale. The mucous membrane of the whole ileum was moderately congested; Peyer's patches were unusually distinct, with a finely granular surface; some of them were slightly elevated and presented a few points of superficial ulceration, two to three mm. in diameter. The colon appeared to be normal. The brain showed marked atrophy of the convolutions, with corresponding increase of the fluid in the pia.

The cause of death in this case appeared to be a cardiac thrombus with resulting multiple embolism occurring as a complication of some acute infectious disease. It was diagnosticated clinically as typhus fever. The speaker said he thought the lesions pointed rather to typhoid than to typhus. The points in favor of typhoid fever were, first, the distinct enlargement of the mesenteric glands, which were not usually enlarged in typhus fever: and secondly, the distinct but slight lesion of Peyer's patches. There was no characteristic lesion of these patches, unless possibly the "shaven beard" appearance. Regarding the case as one of typhoid fever, it would be in the fourth week at least. The most reliable statistics placed the average duration of typhoid fever at twenty-four to twenty eight days. In the fourth week, therefore, if the disease had progressed favorably, one would expect to find varying degrees of healing of the ulcerated Peyer's patches, and this seemed to be the condition in the specimens presented.

In this connection the speaker presented specimens from a recognized case of typhoid fever on the twenty-third day of the attack. The patient was a male, thirty-five years of age, in whom the disease ran a perfectly characteristic course for four weeks. The temperature remained nearly at the normal for about three days; then it rose again and continued high for twenty-three days, when he died of multiple pulmonary thrombi with infarctions. The autopsy in this case showed the heart considerably dilated and flabby, without thrombi. There was an infarction in the anterior border of the right base, about one inch in diameter, and four smaller ones in the left lower lobe. In addition there were many thrombi of the size of a split pea in both lungs, at the bifurcation of the pulmonary arteries. They encroached only moderately on the lumen of the vessels. The spleen was twice the normal size, of a deep red color, and moderately soft. The mesenteric glands were moderately enlarged. The kidneys showed parenchymatous degeneration. The liver was soft and pale. The intestines were heavily coated with mucus, but appeared otherwise normal, except in the lower portion of the ileum, where the Peyer's patches were slightly pigmented and presented a finely granular surface. The colon showed a few pigmented points, probably healed ulcerations, and a few superficial ulcerations not yet healed.

The pathological conditions in these two cases were very similar, yet the clinical history of the first case resembled that of typhus, while that of the second case corresponded with that of typhoid fever. In the first case death occurred about the beginning of the fourth week, or possibly later; in the second case death occurred at the beginning of the fourth week of the relapse. In both the intestines have evidence of lesions of Peyer's patches undergoing repair, and also of a slight enlargement of the mesenteric glands, and decided enlargement of the spleen. The cultures from the spleen in the first case developed nothing which could be regarded as at all characteristic of typhoid; in the second case cultures were not made.

Sarcoma of the Face.—Dr. J. E. Weeks presented this. Tumor was removed from the face of a man aged sixty five. About thirty years ago he had noticed a small tumor on the side of the nose, which, after some years, presented a small ulceration. This tumor was removed in 1870. About twelve years later, the cicatrix became congested and the tumor recurred. The patient then came under the care of Dr. Derby, who found the growth on the left side of the bridge of the nose, near the inner canthus, adherent to the subjacent tissue, and separated from the canthus by a half inch strip of healthy skin. It was nodular, irregular, and elevated, and on removal exposed a bleeding surface. There was no enlargement of the pre auricular gland on that side. The tumor was referred to the speaker for examination. The posterior surface of the tumor was covered with degenerated epithelium, and consisted chiefly of irregularly cylindrical and club-shaped hyaline, homogeneous masses, which took eosin stain like connective tissue. There were small collections of epithelial cells between the hyaline cylinders, which penetrated to a considerable depth. Pymphoid cells were quite numerous, and in some places were seen in the centre of the hyaline masses. There was a scanty connective-tissue framework in nearly all parts of the growth. The blood-vessels were not found in the centres of the hyaline masses, but were quite plentiful on the periphery. The walls of the arteries in the centre of the hyaline masses were thickened and degenerated, and there were extensive extravasations of red corpuscles and blood pigment throughout the growth, indicating profound vascular changes. This form of tumor, the speaker said, had been classified as sarcoma. Billroth described a similar tumor in 1866, which he termed a "cylindroma." This variety of new-growth was most frequently met with on the face, although it had been found at the margin of the anus. Out of twenty-four tumors collected, fourteen were from the mesoblastic elements, and ten from epiblastic elements. The hyaline masses probably resulted from the degeneration of mesoblastic tissue. The term cylindroma should only be employed as an adjective.

An Astragalus.—Dr. R. H. Sayre presented an astragalus from a case of club foot. The specimen had been removed by operation from a patient, aged twenty-six, with very exaggerared talipes varo-equinus. After extensive incision of the soft parts on the inner side of the foot, he was unable, after reducing the varus, to get rid of the equinus; hence, the astragalus was enucleated. This bone presented a very different appearance from the normal astragalus. Its superior articular surface was not more than one third the usual size; the body of the bone was almost completely absent; the neck was much twisted inward and the surface which should articulate with the scaphoid was much altered. The astragalus was bent downward on itself at a very sharp angle. The larger part of it was entirely free from articulation with the bones of the leg. After removing it, it was found that the os calcis was bent inward at an angle of about 45°, so that it was necessary to remove a **V** shaped section from the outside of the os calcis in order to efface this curve. In these old club-feet it was usual to find more or less distortion of the bones. This was about the first astragalus that he had felt compelled to remove in an adult in order to reduce the deformity, but the great alteration in the bone seemed to fully justify this procedure. No more convincing proof could be given of the importance of overcoming the deformity in club foot while the bones were still flexible.

Abscess of the Liver.—Dr. J. S. Thacher presented specimens from a case of abscess of the liver. The man was operated upon six years ago, in Egypt, for abscess of the liver following an attack of diarrhœa. After wearing a drainage-tube for ten months, he recovered completely, and according to his statement, remained well for five years. He entered the hospital last fall complaining of diarrhœa and some abdominal pain. There were a few streaks of blood in the fæces, and he had also the symptoms and urinary signs of nephritis. The liver showed a distinct enlargement and increased hardness. He left the hospital after a few weeks, and did not return until ten days ago. When readmitted, the left lobe of the liver was found extremely prominent—a large, irregular mass projecting in the epigastrium. The right lobe of the liver was less prominent and softer, but was not easily palpated on account of ascites. He had been twice tapped for ascites. He was tapped again in the hospital, and the fluid on examination showed a few

"budding cells." At the autopsy it was found that the part of the liver which had formed the tumor was not that which was most diseased; it was waxy, degenerated, and hypertrophied. The right lobe of the liver was deeply excavated by an enormous abscess. The spleen and kidneys also showed waxy degeneration. The fact that he had been operated upon before for abscess of the liver, and that there had been no elevation of temperature in spite of the large abscess, were the most interesting features.

Cerebro-spinal Meningitis.—Dr. F. Ferguson presented the brain from a case of cerebro-spinal meningitis. It was removed from a man, thirty four years of age, who was admitted to the New York Hospital on February 5, 1894. He was found unconscious in the street, and was brought to the hospital in an ambulance. On admission he was so extremely drowsy that it was impossible to get from him a satisfactory history. He stated that for two past weeks he had suffered from headache and general pains, and that the illness began with chills, vomiting, fever, and cough. He also seemed to have some pain in his chest. The expectoration was blood stained, and according to his statement had been so for two days. The silghtest touch appeared to cause him the greatest pain. The temperature was 102.4° F.; respirations, 36; and pulse, 92. Physical examination disclosed a soft systolic murmur over the heart apex, but otherwise the thoracic examination was negative His pulse was slow, regular, and of good tension, with corresponding heart action. Examination of liver, spleen, and abdomen was negative. He was anæmic, but well nourished. His urine had a specific gravity of 1.022; it contained no albumin or sugar, and microscopical examination was negative. The pupils were contracted. On the day of admission he had a convulsion at 4 P.M., and at this time eighteen ounces of urine were drawn by catheter. He was restless and noisy all night. The following day he complained of headache. The head was shaved and an ice-cap applied continuously. The attending physician, Dr. G. L. Peabody, made a diagnosis of meningitis He was treated with large doses of sodium iodide. The temperature remained at 102° F., while the pulse varied from 92 to 102, and the respirations from 28 to 40. On February 7th his temperature fell one degree in the morning, but rose in the evening to 104° F., the pulse being 100, and the respirations 32 per minute. He was so noisy and restless that night that morphine was given, and on the following day he was still restless and was tearing the clothing, although unconscious. At 5 P.M. his temperature was 103.8° F.; pulse, 106; respirations, 28, and shortly after eight o'clock he died. At the autopsy both the right and left ventricles were found slightly dilated, and the cardiac muscle was anæmic. The lungs were congested and contained numerous punctate hemorrhages in the most dependent parts. With the exception of the spleen, which was rather large and soft, the thoracic and abdominal organs presented nothing of special interest. On removing the calvarium the dura mater was found congested and firmly adherent to the skull over the left cribriform plate. While the meningitis in this location appeared older, extension upward through the cribriform bone and dura could not be recognized. The pia mater everywhere contained pus and lymph, which, however, were more abundant over the vertex of both hemispheres, and over the posterior surface of the cord in the lumbar region. The fourth ventricle also contained pus. On microscopical examination of the brain the pia mater everywhere was found to be the seat of intense inflammation, with great hyperæmia and numerous punctate hemorrhages. On following the vessels through the cortex they were found to be the seat of innumerable small round cells, some of them apparently in the walls of the vessels, and some in the perivascular spaces. Adjacent to the dura the cortex of the brain in places was infiltrated with an unusual number of small round cells, especially at the base of the left frontal lobe, where, over an area of nearly two centimetres in diameter, the entire cortex of the brain was infiltrated with pus. Over this area the dura mater was also extensively involved. Collections of small round cells were also found in limited areas along its external surface. Examination of the cribriform plate and the ethmoidal sinuses failed to show any lesion beyond intense hyperæmia. Bacteriological examination of sections revealed numerous diplococci, identical with the *micrococcus pneumoniæ crouposæ*. The speaker exhibited culture tubes showing the characteristic development of these organisms, and also microscopical slides. He stated that pure cultures of these organisms had been taken from several parts of the brain and spinal cord. In the vast majority of cases of cerebro-spinal meningitis examined by him during the past three years this micro-organism had been found.

Acetabular Form of Hip disease.—Dr. V. P. Gibney presented a specimen illustration. It was taken from a boy who was eight years of age at the time he was first admitted to the hospital, on January 9, 1889. He had already been treated for hip-disease three years, and had worn a protection splint for one year. On admission there was an immense abscess on the outer aspect of the thigh. The inguinal glands were much enlarged. There was a range of motion over 35° or 40°. Two days later the abscess was incised under ether, and on January 26th another sac was incised. In June, of 1890, the sinuses, three in number, were still discharging. They were curetted under cocaine, and this was repeated on January 6, 1891. He was discharged from the hospital shortly afterward. At this time the sinuses were discharging very slightly, the limb was in good position, and he was still wearing a brace. On January 29th of the same year he was readmitted with the sinuses discharging very freely. Shortly after this an abscess was opened, and from this time until October the sinuses were curetted several times. During the month of October he was etherized, and the sinuses on the inner and upper third of the thigh were found to communicate with a sinus in the inguinal region above Poupart's ligament. Tents were drawn through and through. There was no question then about the acetabulum being perforated. Up to April, 1893, these sinuses had variable discharges, and were occasionally curetted. The boy spent that summer in the country, and on his return in the fall the discharge from the sinuses was very slight Early in December, 1893, one sinus remaining above Poupart's ligament was curetted, and the ilium found necrotic. A large drainage tube was inserted. The sinus was scraped thoroughly and a shell of bone removed. The operation was followed by high fever and much pain, and a few days later an abscess formed at the back of the ilium. The boy died of tubercular pneumonia, and the autopsy was made by Dr. H. S. Stearns, on January 24, 1894. The base of the left lung was found to be full of tubercular nodules the size of a pea. The apex was œdematous, the remaining portion consolidated. The whole lower half showed a fairly intense pleurisy with a fibrinous deposit and two ounces of pus. The left lung showed a few recent adhesions behind a large tubercular cavity in the lower part of the lung, with trabeculæ running through and through, and also three or four tubercular deposits at the apex just undergoing softening. The kidneys were slightly enlarged, nodular on the surface, with non-adherent capsules, and markings distinct. The stomach and intestine were normal. The spleen was decidedly enlarged, and contained nodular tubercles. The liver was very much enlarged, weighing four and three quarter pounds, and was lardaceous. The peritoneal cavity contained three or four ounces of pus. The specimen itself showed no disease in the head, neck, or shaft. At the time of section the trochanter itself presented a normal appearance, but the acetabulum was broken down throughout the upper portion, and there was a large hole into the pelvis.

Dengue.—An epidemic of dengue is raging in Jeddah among the pilgrims recently returned from Mecca.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

COLLEGE POLITICS—COMING ELECTION AT COLLEGE OF SURGEONS—RIGHTS AND ASPIRATIONS OF FELLOWS—WANT OF RIGHTS OF MEMBERS—PROPOSED NEW CHARTER—DEFENCE OF MR. ANDERSON'S CASE—LAWRIE, OF HYDERABAD IN ENGLAND—SPECIAL MEETING TO HEAR HIM—QUAIN'S DICTIONARY—SPREAD OF SMALL-POX.

LONDON, June 23, 1894.

"COLLEGE POLITICS," as affairs connected with the Royal College of Surgeons are commonly called, are just now to the fore. By the way, I do not know why one particular college should thus be spoken of, unless that the members are so numerous that the fellows may fancy that the concerns of their smaller number interest the latter. They do, indeed, but in a different sense. The fellows have the election of the council and desire further rights. An election is just at hand for three seats on the council, and there are five candidates. This is the reason college matters are the subject of the week. The members have no voice in this or any other college affair, and therefore are only interested in candidates on personal grounds. Although many questions arise, and there is some expectation of a new charter being applied for, it must be confessed that the interest evinced in the election is rather languid. One candidate, supported by the association of fellows, actually neglected to send in his papers in due time and is therefore ineligible. Another claims support because he lives in a provincial city. Another as the senior fellow. Another is supported by the new society of fellows, which has no programme and apparently no *raison d'être*. When the few hundred fellows admit the members to their rights, every college matter will interest the whole profession. Then a new charter may be of some value. Anent the present position, the association of fellows has passed a resolution that "such changes as the body of fellows may desire should be embodied in a new charter." Not a word about what members may desire.

Before leaving the college I may mention that the council at the last meeting appointed two of their number to represent the college on a committee that has been formed to carry the case of Mr. Anderson before the Judicial Committee of the Privy Council. Important civil rights are involved, and Mr. Anderson has been fighting the cause of the profession as well as defending himself.

Surgeon Lieutenant-Colonel Lawrie has come from Hyderabad to still further demonstrate the results of the Chloroform Commission, which is due to his labors. He has already appeared at one or two of our hospitals and been received with the cordiality his work deserves. Further, it has been arranged to hold an extra meeting of the Royal Medical and Chirurgical Society on July 3d for the express purpose of hearing Dr. Lawrie, who will endeavor to show that chloroform has no effect upon the heart, and that it is useless to watch the pulse during the administration of the anæsthetic. Lawrie's views are, of course, well known, but it will be very interesting to hear them from a man of such striking personality, besides which we may expect an adequate discussion when our premier society holds an extra meeting after the conclusion of the session for the purpose of hearing Surgeon Lieutenant-Colonel Lawrie.

A second edition of "Quain's Dictionary of Medicine" was issued on Monday. This valuable work of reference—which is so well known—first appeared nearly twelve years ago and speedily achieved success. Many changes have taken place in these twelve years. The death of some of the contributors has necessitated their share of the work being entrusted to others. A number of new articles are also inserted, among which I may instance Greenfield, on Microbes; Sidney Martin, on Immunity and Phagocytosis; and P. Manson, on Negro Lethargy. The last named has also revised his article on Filaria Sanguinis Hominis. The rapid progress of knowledge and the changing way of regarding some facts has in fact rendered revision necessary on the part of most of the writers of the first edition, and their authority is perhaps a sufficient guarantee that they have done this work carefully. I note, however, that the venerable editor declares himself still "personally responsible for the work, of which no portion has been issued without being carefully revised by him." Really, therefore, Sir R. Quain may claim to be a very industrious editor, for many of the articles are by the foremost authorities, and can receive no additional importance from any reviser, and the reading of the two volumes, in which the work now appears, comprising 2,500 pages, is a task which few aged physicians would care to undertake.

The spread of small-pox continues to create anxiety on the part of sanitary authorities. A number of provincial towns have suffered, and in not a few cases the disease has been brought by tramps, and where vaccination has been neglected the consequences have been such as were anticipated by medical men.

RELIABILITY OF STATISTICS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Dr. Carl Beck, in his letter in the MEDICAL RECORD of July 21st, has very cleverly ignored everything charged against him, except the date of the recovery of the child reported as Case IX. In this matter he convicts himself of inaccuracy, for the dates he gives do not not agree with each other, or with the time mentioned in his published history of the case. The history I gave for Dr. Beck's information was obtained from the mother, who nursed her child through a serious illness, and must be presumed to know the time of recovery with more certainty than the father. Indeed, even the medical attendants seem to have obtained their revised history from her. In proof of this, and to show how little the father remembered of the particulars, I may quote from a clipping of a letter from Dr. Voegtle, dated June 28 and 30, 1894, which Dr. Beck sent me in explanation of his inability to give me a few facts about this case. Dr. Voegtle writes, evidently in answer to a request of Dr. Beck to obtain these facts: "Will attend to it in the next few days; was there, the wife is in the country, and the husband himself knows nothing definitely about it."

As to the relative merits of exsection and incision, of what value is Case IX. when I have proved it to be one of resection following an exsection?

Again, what value can be ascribed to Dr. Beck's statistics on exsection when they are based on cases, among which, as I have shown, are some in which no exsection was performed? Therefore I repeat: Statistics in order to be valuable should be, as to their material facts, correct.

ARNOT SPENCE, M.D.

July 27, 1894.

TRANSPORTATION OF THE INSANE TO HOSPITALS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the MEDICAL RECORD of July 21st, page 76, in regard to the "Transportation of the Insane to Hospitals," you say, "those in charge of our public hospitals have absolutely nothing to do with the manner in which patients are brought to them." You are mistaken so far as New York State is concerned. It is the practice for the Superintendent of the Poor of the County to notify the asylum authorities, and they send attendants to take the lunatic to the asylum. It is very exceptional in this county for private persons to take lunatics to the hospital. I think the rules of the Lunacy Commissioners require the insane to be taken by their own attendants on notice to the hospital authorities.

A. D. KENNEDY.

MORRISVILLE, N. Y., July 23, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 28, 1894.

	Cases.	Deaths.
Tuberculosis	92	112
Typhoid fever	21	12
Scarlet fever	38	4
Cerebro-spinal meningitis	1	3
Measles	42	5
Diphtheria	163	38
Small-pox	3	0

A Varied Diet.—An inquest was held in London, not long ago, on the body of a man who had died suddenly. The man used to make his living by going about to the different "pubs" in the evening, and eating anything that was offered him, for a small monetary consideration. He died after an operation for intestinal obstruction, and at the autopsy the following articles were found lodged in various portions of the digestive tube: A bullet, twenty or thirty pieces of cork, twenty pieces of tinfoil, a piece of string eighteen inches long, with corks attached, and a piece of leather nine inches long, with a hook at each end.

In Memoriam.—Dr. Samuel T. Hubbard, the last survivor of the original members of the New York Society for the Relief of Widows and Orphans of Medical Men.

At a meeting of the Board of Managers of the New York Society for the Relief of Widows and Orphans of Medical Men, the following remarks were read by Dr. Andrew F. Currier. On motion of Dr. Charles A. Leale they were ordered entered on the minutes of the Board. It was also ordered that a sufficient number of copies be printed and sent to Dr. Hubbard's family, to the medical journals of the city for publication, and to the members of the Society. It was also ordered that they be incorporated in the annual report of the Society: "Died, June 1, 1894, Dr. Samuel T. Hubbard, at the age of eighty six. This is the last link which bound us to the founders of this Society. Of the original members whose names appear on the list for 1842, all are gone now; the last leaf has fallen from the tree. The fathers are no longer with us, they are but a memory, a reminiscence. 'The king is dead, long live the king!' Dr. Hubbard was our Nestor, and I do not see how one could have been very long in his presence without being strongly attracted by his most lovable personality. It was not the attraction of a weak old age, it was not the attraction of an overpowering intellectuality. No, his was the vigor of the rugged oak which is in its prime when other trees around it are decaying, or of the stanch old ship with timbers sound and spars unbending after many a storm, being made of honest material through and through. He made you think of Moses, with his more than fourscore years, looking over into the promised land, his eye undimmed and his natural force unabated, and from the heights of his serene old age I doubt if one ever saw him looking back to the remote days of the past, and making comparisons unfavorable to the present. It would not have been like him to do so, for his life, so far as I have known it or could ascertain, was one of charity and beauty. There is something about the physicians and surgeons of New York of half a century ago, a subtle quality, which it seems to me is not developed to the same degree with us. I do not mean genius, though Mott and Parker and Kearney Rodgers and others of our early *confrères* possessed that. It may be that it was strong common sense, or something allied to it, a power of handling men and women to advantage, a *savoir-faire*, and, perhaps, in our more assiduous cultivation of science we have somewhat overlooked that important qualification. Such a quality our dear friend possessed to a considerable degree. In the meetings of our Society how we shall miss him. He was always present, always prompt in his attendance, genial and wise in discussion, leaning toward the broadest charity in the objects for which our Society is conducted. Peace to his ashes! His memory will long be fragrant among us.

"'His life was gentle, and the elements so mixed in him, that nature might stand up and say to all the world, This was a man!'"

A Centenarian.—A woman is now living in a Home for the Aged in Sables d'Olonne, France, who was born in 1790, being, therefore, one hundred and four years of age. She is in full possession of all her faculties and receives daily a number of visitors, who are attracted by the reports of her extreme age, entertaining them with her lively conversation and witty repartee.

The Bicycle for Women.—The bicycle has become the fashion even for women, and the following wise advice should prove of interest to physicians. Dr. Laura Liebhardt, in discussing before the Colorado State Medical Society the question of bicycle exercise for women, declared that "the majority ride with the saddle too low," and that this is responsible for cramping of the chest, straining the back, and impeding full action of the muscles of the leg. There results a constant tension of the muscles above the knee, which gives a short, awkward stroke, as the reach is too short. The seat should be amply high for the entire leg to be extended and give to these muscles a second of relaxation on the downward stroke of the pedal. The knee must have perfect freedom, and in this respect a woman finds herself particularly handicapped, as she is unable to make the entire stroke with the action of the knee limited by a dress skirt. In Paris they do not stop with the unsightly bloomers, but have almost universally adopted the practical, yet far too radical, knickerbockers. This striking costume attracts but a passing notice, for the *rationale* of it all appeals to the French mind; but as we have fortunately not yet reached the Parisian standard, it is to be hoped that knickerbockers will confine themselves to spins in the mountains. Wheelwomen also subject themselves to needless jars by jumping instead of gliding from the wheel. They should be taught to mount and dismount from either side as men are wont to do. Corsets on the wheel, as elsewhere, should be denounced in the strongest terms, although nearly one half of all wheelwomen tie up their muscles in this barbaric fashion. Many condemn cycling on the ground that the movements are identical with those called forth in running a sewing-machine. Machine-running stimulates more the faulty way of wheeling, and the position is almost identical with that assumed when the handle-bars and saddle are placed too low. In wheeling there are a greater variety of movements and less tension. Two-thirds of all women who ride wheels foolishly incur great risks by riding during certain periods, even to the extent of hill climbing, when they should never mount a wheel, except for short distances, during the first two days. During the discussion the general opinion seemed to be that the saddles in use were hardly proper. The long, wide saddle suspended between springs was considered very much superior to the rigid or hard models. A saddle much wider throughout was considered desirable, and cases were quoted to substantiate this claim.

Signs of Death.—A correspondent of *The Lancet* writes that he was called to see an old lady who was believed to be dead, but whose appearance was so lifelike that the family dared not bury her until they were absolutely certain that death had actually occurred. To quiet their apprehensions the physician applied a series of tests with more or less confusing results. The following were the tests in the order in which they were applied: 1, Heart-sounds and pulse—absent; 2, respiration

—absent; 3, temperature of the body 60° F., the same as that of the atmosphere of the room; 4, a needle left for some time in the substance of biceps muscle showed no signs of oxidation; 5, electricity—no response to electrical stimulation of the muscles; 6, a ligature tied about the arm caused no swelling of the veins below; 7, upon opening a vein the blood was found to be fluid; 8, the subcutaneous injection of ammonia gave rise to a dirty-brown stain, said to be indicative of commencing decomposition of the tissues; 9, cautious movements of the joints revealed a slight stiffness of rigor mortis; 10, upon holding the hand up against a powerful light, the red line of light between the fingers was as distinct as in the case of a living person; 11, the temperature of the room was raised, and when evident decomposition had set in the woman was pronounced dead.

Hyperpyrexia.—Dr. Richet reports a case of intermittent fever in a woman in which the temperature rose one day from 102° in the morning to 113° F. in the evening. On two other occasions the fever rose to 115°. Under the influence of quinine the temperature fell to 97°, but rose again to 115° F., when the remedy was discontinued. The patient finally recovered.

Explosive Compounds.—A Parisian lecturer in speaking of the dangers of polypharmacy enumerated explosion as one of them. He had collected several formulæ of this anarchistic quality, among them being a liniment of tincture of iodine and turpentine, another a mixture of chromic acid and glycerine, and a third a tooth-powder composed of pulverized charcoal, cinchona bark, and chlorate of potassium.

Diseases of the Rectum.—Our esteemed friend, Dr. Baudoin, of the *Progrès Médical*, takes an interest, and a very intelligent one, in medical matters in this country. He is doing a good work in correcting some errors and misapprehensions concerning America which our French *confrères* entertain, and deserves our gratitude therefor. Some of our customs, however, strike him, not unreasonably, as peculiar, if not amusing. Among these is the multiplication of specialties, in which he thinks we have gone ahead even of our English cousins. The specialty of rectal diseases is one that recently engaged his attention, and he has very kindly attempted to provide its professors with a name. He thinks they might be called rectists, after the analogy of oculist and aurist, or better perhaps, because longer and more sonorous, proctologists. The *Quarterly Journal of Proctology* would be an excellent name for our esteemed contemporary by the Falls of the Ohio.

The New French Medical Law.—The new law regulating the practice of medicine in France came into force on December 1st. As inquiries are frequently made as to the conditions under which foreign doctors may practise their profession in France, the following explanation of their position under the new law may be of interest. We give it on the authority, and almost in the words, of the *Journal des Connaissances Médicales*, the editor of which is Professor Cornil, a member of the French Senate, who was president of the committee which drafted the law, and who, in fact, may almost be described as its author. The new law has taken away the power formerly possessed by the Government of authorizing medical men having foreign diplomas to practise in France. Under the new law no one is allowed to practise unless he possesses a French diploma of doctor of medicine. Certain facilities may, however, be granted, according to the circumstances of the case, to foreign doctors wishing to obtain a French diploma. What these are may be gathered from a circular letter which the Minister of Public Instruction has lately addressed to the rectors of the medical faculties throughout France. The periodical registrations required of French medical students may be partly or totally dispensed with, but exemption from examination can never be more than partial. In no case shall candidates be exempt from examination in more than three subjects. Such exemption as may be allowed will be granted by the minister on the advice of the faculty of medicine before which the candidate wishes to present himself, and of the Consultative Committee of Public Education. In considering applications the faculties must concern themselves solely with the value of the diplomas and scientific works submitted to them by candidates. The provisions apply to French citizens who have obtained a medical qualification in some other country as well as to foreigners, and, indeed, the Minister instructs the medical faculties to exercise special care in weighing the claims of Frenchmen who, on the strength of a foreign diploma, ask for exemption from part of the tests which are compulsory in the case of their countrymen who go through the ordinary course at home. The course to be pursued by an English medical man who wishes to practise his profession in France is, therefore, to select one of the recognized faculties—Paris, Montpelier, Nancy, Lyons, Bordeaux, Lille, or Toulouse—and submit to it his papers with whatever records of scientific work or other claims to professional recognition he may possess. He will then be informed in due course what examinations he must pass before he is pronounced *dignus entrare in nostro docto corpore.*—*The British Medical Journal.*

A Swiss Paper relates that of the seven thousand physicians who attended the Medical Congress in Rome, only five hundred were invited to the garden party in the grounds of the Quirinal, while there were present about two thousand other persons, many of whom had found a way to buy tickets at $10 each.

Phosphorus Butter.—Comby (*Prat. des Mal. des Enf.*, 1893) recommends the following prescription, a modification of Trousseau's, for the preparation of iodo phosphorated butter, which may be used as a substitute for cod liver oil in hot weather:

℞. Fresh butter	1 lb. 1½ oz.
Iodide of potassium	gr. iv.
Bromide of potassium	gr. xv.
Chloride of sodium	ʒ ij.
Phosphorus	gr. ¼.

About one-third of an ounce daily, spread on bread.

Greek Typewriting.—A lady in Cambridge announces in the London medical journals that she is prepared to typewrite Greek manuscripts. She will have plenty to do when this is adopted as the official language of international congresses.

Insanity from Tea drinking.—In a report upon insanity in Ireland, recently issued, attention is called to the immoderate use of tea as a cause of mental disease among the poorer classes. "While the moderate use of properly prepared tea," the report states, "is regarded as innocuous, or even beneficial, in its action on the nervous system, its ill effects, when decocted or over-infused, on persons who make it their staple article of dietary, are dwelt on by almost all the resident medical superintendents in their several reports. Undoubtedly, the method of preparation adopted, and the excessive use of this article of diet, now so general among our poorer population, tends to the production of dyspepsia, which in its turn leads to states of mental depression highly favorable to the production of various forms of neurotic disturbance." The tea used is generally of an inferior quality, and the method of preparation is to put a quantity in the teapot early in the morning, and to allow it to stew during the day, water being added as required. The excessive use of tobacco, also, especially among the young, is thought to contribute in a minor degree to swell the statistics of mental failure.

A New Lip.—Dr. Berger has presented to the Paris Academy of Medicine a young woman whose under lip was restored by a graft taken from the arm. The new lip presented a very natural appearance, the vermilion border being almost perfect.

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Original Articles.

CASES IN GENITO-URINARY SURGERY.[1]

I. EXCISION OF THE BLADDER FOR EPITHELIOMA. II. EXCISION OF TUBERCULAR SEMINAL VESICLES, TESTES, AND SPERMATIC CORDS. III. IMPLANTATION OF AN ARTIFICIAL TESTIS AFTER CASTRATION. IV. VESICAL PAPILLOMA OF UNUSUAL DURATION.

BY ROBERT F. WEIR, M.D.,

PROFESSOR OF SURGERY, COLUMBIA COLLEGE; SURGEON TO THE NEW YORK HOSPITAL, ETC.

BEFORE presenting to you the cases of excision of the bladder, a few prefatory words on the subject may, I trust, be allowed.

Tumors of the bladder of a malignant character are encountered in about eighty per cent. of neoplasms of this organ. Tumors of any kind are very rarely situated at the summit or on the anterior face of the bladder or in the trigone; but the region between the summit and the mouths of the ureter, and especially on the posterior wall, is the usual site of such growths. One-half of the cases of carcinoma, however, invade one or both of the ureteral orifices. Secondary growths occur quite late in the disease, though adjacent gland infection is not uncommon; but the latter are usually situated within surgical reach. The mortality involving the removal of a carcinomatous growth of the bladder reaches, according to Alberran, to nearly fifty per cent. The usual method for removing vesical tumors has been, until quite recently, that of exposing the growth by suprapubic section of the bladder, with its subsequent removal by the knife or scissors, the surgical interference seldom going beyond the mucous or muscular layers at the base of the growth. Recurrence after this method of operation amounts to fifty-seven per cent. The method of a more heroic operation was inaugurated first by Sonnenberg, in 1884, who then extirpated nearly the entire bladder, except the neck, trigone, and ureteral orifices. The patient survived five weeks. At the autopsy a new but comparatively small bladder, formed of the remnant of that organ, and a modified cicatricial tissue was found. A further step in advance, however, was made in 1885, by Antal, who evolved a procedure which has proved since of great importance in connection with the surgery of this region of the body. It consisted in the demonstration that the peritoneum could be peeled off from the summit and posterior wall of the bladder without very much difficulty. Since that time a number of cases, nearly twenty in number, of resection of more or less considerable portions of the bladder walls outside of the limits of malignant growths have been undertaken. The benefit that accrues from this wider removal of a malignant growth is seen at once in the diminished chances of recurrence after such operations. From fifty-seven per cent., as already quoted as the proportion of recurrences after the ordinary removal, it has been diminished by this latter procedure to twenty-eight per cent. With the encouragement afforded by this improvement in the technique of the operation, surgeons have been led to undertake the removal of larger and larger portions of the bladder, and even total ablation of this organ has been successfully undertaken. Bardenheur, in 1887, removed the whole bladder in a man, aged fifty seven, for cancer of the base that involved the ureters. This was easily accomplished, the peritoneum peeled off readily, though considerable hemorrhage was encountered as the neck of the bladder was divided. This was readily checked by tamponing the parts. Death, however, resulted on the fourteenth day from uræmia. Two other extensive resections, though not total ones, have since been reported by the same surgeon, one of which has remained completely cured up to the date of the last report, and one died five months later from a recurrence of the disease.

The difficulty connected with such extreme operations, aside from the immediate results of shock, etc., was centred in the disposition of the severed ureters. Bardenheur, in his experiments on animals, endeavored to solve the difficulties by implanting them into the rectum, but in all the animals experimented upon death resulted either from dilatation of the ureters, due to the contraction at the place of implantation, or a fatal issue ensued in consequence of infectious pyonephrosis of rectal origin. Tuffier, the French experimenter, also had the same result. Similar fatal results have occurred in the human subject in nearly every instance where this implantation into the rectum has been resorted to.[1] In women, where extirpation of the entire bladder has been twice resorted to, the vagina has been used as a retentive sac for the urine with some satisfaction; but in the male two other methods have been suggested that are more worthy of trial. Le Dentu, having accidentally wounded the ureter in a gynecological operation, brought its kidney end to the abdominal wall, where it was fastened by sutures. The patient died on the thirteenth day. No urethral or kidney changes were found. Pozzi had the same accident in an operation and resorted to the same expedient. The patient recovered and urinated through the abdominal wall for three months, when the discomfort of this discharge demanded a nephrectomy, which was performed. The ureter and kidney showed no abnormal changes.

While it is probable that in accidents of this nature, occurring in the future, such methods of diverting the urinary discharge will be but seldom resorted to, since the union of a divided ureter has now been satisfactorily proven to be capable of being accomplished by the methods of Van Hook and Kuster, yet the results of the abdominal attachment of the ureteral end have, in the main, been encouraging. A better method than this, however, exists. De Paoli and Brusachi have shown us, by experimentation on animals particularly, that if a small portion of the bladder should be left, let us say after extirpation of a tumor involving the ureteral orifices, the ureters can be inserted into the portion of the remaining bladder-walls, without subsequent contraction, by first making an opening through the thickness of the bladder, cutting away around this opening a small circle of the mucous membrane, and then pushing through the opening in the bladder wall the end of the ureter, having enlarged the orifice of this by splitting it up a short distance, as is usually done in the urethra in amputation of the penis, and then stitching the ureteral mucous membrane to the mucous membrane of the bladder. External to the bladder-wall this fixation is reinforced by other sutures. This method is warmly indorsed by Guyon and Alberran, and has been successfully resorted to in the human sub-

[1] Read at a meeting of the Practitioners' Society, held 1894.

[1] Chaput: Centrabl. f. Chirurg., No. 14, 1804, reports a case of implantation of divided ureter into colon, with, five months later, no evidences of renal infection.

ject by Penrose, of Philadelphia.[1] Kummel, still bolder, after removing the entire bladder in a woman, attached the ureteral orifice to the vesical end of the urethra. His patient, however, did not survive long enough to test the value of this procedure. Novaro,[2] McArthur,[3] and Baum have also implanted ureters into the bladder to relieve utero-vaginal fistulas.

Another method has been suggested which is not so attractive. It is based upon the fact that a ligature of the ureter determines usually atrophy of the corresponding kidney. It has, therefore, been suggested that in an extirpation of the bladder involving the ureteral orifice the divided ureter be treated in this fashion.

This brief account of the methods of undertaking an operation of this extent would hardly be complete without a slight reference to the advantage claimed for the enlargement of the operative field by symphyseotomy. This section will permit of a separation of from six to eight centimetres (two to three inches) and thereby the lower portion of the bladder will be literally exposed. From experiments upon the cadaver, as well as my experience on the living subject which is to be presently related, I am convinced that this latter addition to vesical surgical procedures will rarely be needed. The bladder can be removed, or rather that portion of it usually involved in a neoplasm can be widely removed, without much surgical difficulty, by the simpler measures of peeling off the peritoneum, not only from its summit and posterior walls, but from its lateral surface, aided by the employment of the position of Trendelenburg.

My first experience in the removal of a considerable portion of the bladder, and the ease with which the peritoneum can be lifted from that organ, occurred in 1891, when a man, fifty-nine years of age, was admitted, in the month of December, to my wards in the New York Hospital, with a history that eighteen months previously blood had appeared in his urine, which after an interval of several months recurred and persisted up to the date of his entrance into the hospital. He had but slight pain in the bladder, with moderately frequent urination. The urine was more or less persistently bloody, without evidence of renal disease or sugar. No stone was found in the bladder by sounding; the prostate was normal in size; bimanual examination gave negative results. A cystoscopic examination, under an anæsthetic, revealed two tumors on the posterior wall, the right one a little larger than the other. On December 26th, with a Petersen bag in the rectum, into which was injected six ounces of water, and with seven ounces of Thiersch's solution injected into the bladder, the patient placed in Trendelenburg's position, by a three-inch incision in the median line the bladder was exposed, the preperitoneal fat "clawed" up from the pubes toward the umbilicus, and the bladder then opened by a vertical incision. The lips of this incision were held apart by silk ligatures. A single tumor, the size of the distal phalanx of the thumb, was found on the upper part of the posterior wall, somewhat to the right of the median line. To effectually get beyond the growth the peritoneum was stripped off from the summit and the posterior surface for a space reaching from one seminal vesicle to the other and down nearly to the prostate. In so doing, at one point a rent was made in this membrane, but this was promptly sewn up with silk sutures and gave rise to no further inconvenience. A triangular portion, including the tumor, but going widely from its base, about two and a half inches on each of its sides, was finally removed from the posterior wall of the bladder. As I found considerable difficulty in closing by sutures the lower angle of the space thus formed in the bladder-wall, I abandoned the attempt to close any portion of the bladder, believing this to be safer for the patient. Iodoform gauze was therefore packed between the bladder and the peritoneum, the bladder itself filled with iodoform gauze around a rubber catheter passed to the bottom of the organ and the drainage accomplished in this way, and by ordinary antiseptic dressings applied over the wound in the abdominal wall. The patient did well, his wound very nearly closed; but on February 19th he was attacked by erysipelas and died four days later, seven weeks after the operation. At the autopsy it was seen that the suprapubic wound had very nearly healed, the gap in the bladder on its posterior wall had closed over by a smooth cicatricial surface, and everything promised well if life had continued longer. This line of excision of the bladder-wall is well shown in Fig. 1, which accompanies this.

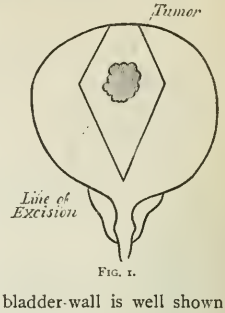

Fig. 1.

I. Excision of the Bladder for Epithelioma. Case I. *Epithelioma of the Bladder; External Resection of the Bladder-walls.*—A man, aged fifty-five, entered the New York Hospital, February 25, 1893, with the history that in August, 1891, he began to pass blood with his urine. This persisted with every act of micturition for several months, when it stopped for four months and then recurred. Other hemorrhages at much less intervals took place, until April, 1892, when a suprapubic cystotomy was done by Dr. Park, of Buffalo, and two tumors removed from the bladder, one the size of a walnut, and the other no larger than a bean. A fistula continued for a considerable time, but was healed at the end of fourteen weeks.

In September, 1892, another hemorrhage occurred, and since that time blood has at irregular intervals appeared in the urine. On examination there was found in the abdominal wall, just above the symphysis, in the cicatrices of the previous operation and at its upper part, a tumor the size of an English walnut, elevated above the surrounding skin and reddened on its surface with an indurated area surrounding its base about two inches in diameter. A cystoscopic examination, made by Dr. William K. Otis, revealed a tumor on the postero superior wall of the bladder. There were some enlarged glands of a superficial character in each groin.

On March 1st, under ether, with a rectal distention by a double Barnes bag containing eight ounces of water,

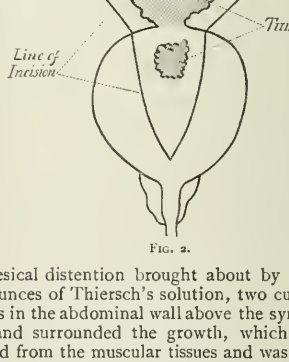

Fig. 2.

and a vesical distention brought about by the injection of six ounces of Thiersch's solution, two curved vertical incisions in the abdominal wall above the symphysis were made, and surrounded the growth, which was readily separated from the muscular tissues and was found eventually to be attached to the summit of the bladder. The peritoneum was then pealed off by a blunt dissector, aided by light cuts from a scissors, from the posterior wall of the bladder down to the prostate, and on each side as far as the seminal vesicles. This whole exposed portion of the bladder was excised, including a papillomatous growth

[1] American Journal of the Medical Sciences, April, 1894.
[2] Centralbl. f. Chirurg., No. 27, 1893.
[3] Trans. Ill. Med. Soc., 1889.

in its centre as large as a walnut, as well as the growth rising out from the summit of the bladder (see Fig. 2). The section of the bladder-walls passed at least from one-half to three quarters of an inch beyond the growths in all directions. The bladder was sewn without difficulty from the bottom with interrupted catgut sutures, which were purposely passed through all its coats; and in one or two places on its summit with silk-worm gut introduced only through its muscular coat for additional support. A small opening was left toward the pubis, through which was passed a Guyon double rubber-tube drain. The wound in the abdominal wall was packed with iodoform gauze and its upper end united by silk-worm-gut sutures. Sterilized dressings were applied. The patient did well after the operation, leaving the hospital eight weeks later all healed, holding his water from three to four hours. The capacity of the bladder was from four to five ounces. About two weeks after the just-described operation of exsection of the bladder, the glands in each groin were also extirpated. A microscopic examination in each of these two cases of resection of the bladder showed the neoplasms to be epitheliomatous in character.

II. Double Castration and Complete Extirpation of the Vesiculæ Seminales and Vasa Deferentia for Tuberculosis.—Germane to the foregoing subject of excision of the bladder is the experience obtained in extirpating the seminal vesicles. Every surgeon has been at times disappointed, in practising the operation of castration on one or both sides of the testes affected beyond salvation by tubercular invasion, at his inability to divide the vas deferens at a height satisfactorily beyond the reach of the disease, even when this is apparently of testicular origin, and is too often compelled to leave the stump of a diseased cord in the wound, hoping that, as happens elsewhere, nature's resisting powers may overcome the probable small quantity of tuberculous material left. All the more is this dissatisfaction increased when he finds either that a tubercular knot exists at the same time on the corresponding side of the prostate, or possibly that a similar involvement can be detected in the seminal vesicle of that side. It is only comparatively recently that endeavors have been made with any encouragement to more radically rid the patient of his encroaching disease. Bungner [1] has advised that in castration the vessels of the cord should be separated at the inguinal ring from the vas deferens, duly ligated and severed, and that traction should be then made upon the vas deferens to such a degree that it would tear across oftentimes at a considerable distance beyond the internal ring. This, however, is an uncertain procedure, and while it is not attended with any risk it does not compare in exactness or thoroughness with the methods that have previously been suggested by Roux, of Lausanne, or Villeneuve, of Marseilles. The latter advised that in such cases the incision, for the castration should be extended in the abdominal wall up to and beyond, if necessary, the internal ring, and down to the peritoneum, which could then by the finger be separated from the lateral walls of the bladder, using the cautened vas deferens as a guide until the top of the seminal vesicle was reached, when the vas deferens could be divided and extracted. Roux suggested in these cases, where the prostate or the vesicular seminales were involved, that a semicircular incision should be made parallel to, and anterior to, the anus, and through this the rectum separated from the prostate; and if the seminal vesicle was involved, that at the base of the prostate a transverse incision should there be made in the fascia covering of the seminal vesicles, whereupon this portion of the generative apparatus could then be readily peeled off from the bladder and removed, when the castration, either previously begun or now undertaken, could be completed after the separation and ligation of the vessels, by making traction upon the vas deferens, when it would come out its entire length like an earthworm from its hole without any further risk to the patient. The following case, in which this procedure was resorted to, will illustrate the ease, if not the efficacy, of this manœuvre.

[1] Centralbl. für Chirurg., No. 46, 1893.

Case II. *Tuberculosis of Testicles, Prostate, and Seminal Vesicles.*—Ferdinand R——, aged twenty-eight, was admitted to the New York Hospital, October 19, 1892, with the history that he had had "inflammation of lungs" when a child. When fourteen to sixteen years of age had enlarged cervical glands, which did not suppurate. Four years ago had gonorrhœa for six months; a year later a second attack. Some gleet noticed at times ever since. Six months ago the left testicle was noticed to be swollen to size of an orange. It became very tender and painful. Treatment by cold and rest reduced it one-half, which size persisted. He then suffered great vesical irritability, urinating every few minutes, noticing a few drops of blood at meatus afterward. Two months later right testicle was similarly affected, both testicles remaining the same size for the past three months. Vesical irritability less for two months, micturition every hour. General health good. No tubercular family history.

Admission: Urine yellow, acid, 1.010, trace of albumin, pus, and blood.

Examination.—Epididymis on each side swollen, globus major and minor enlarged, hard mass between them. Each epididymis tender on firm pressure, skin not adherent. Both cords enlarged, right more so. Right seminal vesicles much enlarged, a nodule also felt in right side of prostate. Tubercle bacilli found in urine, but only when pressure per rectum was made in the rectum on the prostate.

The seminal vesicle and prostate were therefore considered the foci of disease, and in the hope that relieving the patient of these the bladder might be spared permanent invasion a radical operation was advised and practised. Under ether an incision was made on right side from lower part of scrotum carried up over inguinal canal. Testicle and cord exposed and separated from spermatic vessels at internal ring. Testicle softened in places and showed several cavities filled with pus. Cord apparently normal. Fascia of external oblique muscle cut through over canal and cord, vessels separated as high up as possible, ligated, and cut. Here peritoneum was accidentally opened about three fourths of an inch. This was closed by suture. This rent was made in an endeavor to separate the peritoneum from the lateral aspect of the bladder, following the course of the vas deferens, as suggested by Villeneuve; but it was not an easy thing to do, and in carrying it out, as said before, the peritoneal cavity was entered. In the left side an incision was made exposing the testicle and cord, which were separated from the vessels well up into the canal, vessels ligated and cut. The testicles, free from the scrotum, but attached to their cords, were left hanging at the internal rings. Roux's operation was then chosen to follow, with patient in lithotomy position *A*. Curved incision starting at one side of anus was carried anteriorly to other side, allowing the anus and rectum to fall back. Incision carried up until prostate and bladder-wall were exposed. Here the dense fascia binding down the vesicles to the bladder was cut through transversely, giving ready access to the ampulla of the vas deferens and the seminal vesicles. Right seminal vesicle found dissected free from bladder and removed, also the affected portion of the prostate, and subsequently the other vesicle. Both cords with testicles and whole length of the vasa deferentia were drawn out in front from the castration wounds in scrotum. Then the fascia of external oblique was sutured with catgut over a gauze drain. Skin closed with catgut, similarly the incision on left side was treated. The perineal wound was packed with iodoform gauze and sutured with two sutures on either side of anus. Wet dressing. Reacted fairly well.

The subsequent history of the patient was in brief that for the first four weeks urination improved and the tubercular bacilli disappeared, but this amelioration was due to the effect of a small fistulous track that resulted

from the wound in the prostate, and which persisted for nearly seven weeks. After its healing the bladder irritation increased, and injections every second day of ten per cent. iodoform in starch or glycerine were resorted to for some time with benefit. He passed then from observation. The scrotal and ante-rectal wounds healed satisfactorily.

III. The Implantation of an Artificial Testis after Castration.—A case little less serious than those foregoing is the attempt made to replace a testicle lost by the operation of castration. A man, thirty-seven years of age, who had had for nearly two years a tubercular involvement of both testes, the right being most seriously affected, was compelled by the advance of his disease to submit to castration. The left testis, being less diseased, was saved by a process of scraping and packing with iodoform gauze.

When before the operation I announced to him that the right testicle was so much damaged that its loss would be likely to ensue, he begged most piteously that I should not remove the entire organ. This request I endeavored of course to comply with, but found it impossible to do so; but at the completion of the castration in the ordinary way I was enabled to relieve his mental anxiety by resorting to an expedient which experience in other directions had led me to believe might be successful here, and that was to implant into the cavity of the scrotum left vacant and surgically clean by the thorough removal of the diseased parts, a ball of celluloid duly disinfected. This, about an inch in diameter, was placed in the former site of the testis, and the skin drawn over and properly sutured. Healing followed promptly and without any difficulty, and the patient has now worn this artificial testicle since May, 1893, with a contented mind and proud yet of his virile powers. I was led to this procedure, from two or three successful attempts to use celluloid in overcoming defects and deformities. Two years before, I had an opportunity of covering a defect of the skull, produced by a compound depressed fracture, by inserting in the space left after the removal of the depressed bone fragments a thin plate of celluloid one and a half inch by an inch in diameter. This has remained *in situ* without any disturbance to the patient since then. The little lad, the subject of this experiment, has been already shown to you, but I beg to present him again for inspection. The idea of using celluloid as a material to replace bone or cartilage defects originated in the Vienna school with an assistant of Billroth by the name of Fraenkel.[1] Since then it has been resorted to a number of times for this particular defect in the skull, and of late for defects elsewhere. It has been applied, for instance, to replace a loss in the tarsal cartilage of the eyelid. It has also been applied to remedy the removal of the edge of the orbit, and thus aid in keeping the eyeball in position. It has been, moreover, used, even immediately after resection of the superior maxilla, in every case with advantage. Very recently I have utilized it in three instances to overcome a deformity of the nose from sunken cartilages, for the purpose introducing a portion of the celluloid suitably shaped to suit the different deformities; placing the support in position either from without through a small incision, or better still, from within the nostril. The suggestion of this way of overcoming a very troublesome nasal deformity was made by Dr. Lewis A. Stimson, who employed for this purpose either gutta-percha or aluminum. In my judgment, however, celluloid is a material much better borne by the tissues than either of the two substances just mentioned.

Following the example set forth in the case just related, I understand that another testis has been artificially supplied, or simulated by a celluloid one, by my friend Dr. Guiteras, in a case shortly to be published, and also by Dr. Hartley in a recent case.

IV. **Vesical Papilloma of Unusual Duration.**—The last case that I shall venture to bring to your notice, in connection with genito urinary surgery, is one of a tumor of the bladder, which, occurring in a man of fifty-two years of age, possesses the points of interest presented briefly as follows:

1. That it had existed for an unusually long time, for the history showed that the bleeding had persisted off and on for a period of thirty-seven years. This is beyond the duration of the longest period mentioned by Guyon or Alberran, which was in two cases respectively thirty and thirty-one years.

2. That the diagnosis was made most satisfactorily in this instance by the employment of Guyon's method, viz., the urination of the patient into three glasses, in the last of which the most and freshest blood was found. Also, as a corroboration, that, after washing out the bladder, a bimanual examination was made, the catheter being left *in situ*, by which manœuvre fresh blood was pressed out in small quantities through the catheter, or else was washed out of the catheter after it was withdrawn.

3. That in this case a cystoscopic examination failed to reveal the existence of the growth. This investigation, I may add, was made at the hands of one who was particularly expert in the use of this instrument.

4. And what is, after all, of the most clinical importance, was that the tumor—a papilloma about one inch and a half in length and one quarter of an inch in diameter, and quite fibrous in character, with fringes on its free ends—was situated just above and to the right side of the meatus internus urinarius. This tumor was detected in a very ready manner after the suprapubic section had been made, by the insertion of a large Ferguson's glass vaginal speculum. This idea had been suggested by Fenwick, of London, who used such a speculum as a sort of caisson, even with the bladder more or less filled with water or urine, in which case the speculum was to be passed to the deeper part of the bladder, the imprisoned water soaked or wiped out, and the bladder thus exposed carefully inspected. I found it better, however, to wipe out the bladder as well as possible, then introduce the speculum and sweep it along the walls of the viscus; and in this instance, before very long was able to recognize the tumor in the situation just described. Through this same speculum, which was about one and a half inch in diameter, I could and did seize the tumor with a forceps and with a curved scissors cut it off, and then with a Paquelin cautery lightly touched its bleeding surface, and finally packed upon the wound, from which the blood did not entirely cease by the light cauterization, a wad of iodoform gauze and hold it there firmly until all hemorrhage was checked. The whole procedure answered so well these various ends that I beg to commend to your notice the serviceability of this method of examination and operation. It commands a ready view of the whole of the bladder in its lower and posterior parts, which parts are most affected by growths. It enables one to readily recognize the mouths of the ureter, and to pass into them, if necessary, instruments for their further exploration, etc.

The bladder in this instance, after removal of the tumor, was sewn snugly together, and the abdominal wound left open. The patient made a prompt recovery, with a very trifling leakage for eight days, and has remained well since.

The tumor was a papilloma with a heavy fibrous stroma.

[1] See Wiener klin. Wochenschrift, No. 25, 1890, No. 16, 1891, and Frey, No. 3, 1893.

The Czar gave the physician who treated him during his attack of pneumonia last winter the sum of $30,000.

A New Hanging Machine is to be put to the practical test soon in Connecticut. It is so constructed that the weight of the condemned criminal stepping on a platform sets in motion the necessary machinery for his suspension. Some people protested against its use on the sentimental ground that the man hanged would be virtually a suicide.

A MODERN IDEA IN SCIENTIFIC MEDICINE.

By JOHN AULDE, M.D.,

PHILADELPHIA, PA.

THE claim has been put forward, and not without show of reason, that the science of medicine lags behind the other sciences, and that in consequence of this backward condition not only is the average length of life less than it should be, but also that there is an augmentation of the total sickness. Admitting that preventable diseases are far too common, and hence, as a matter of course, the national vitality lowered in proportion, it is still doubtful if the charge above quoted is entitled to stand, since the fact is patent that much has been accomplished, even within the past decade, to alleviate human suffering, to control or modify disease, and to prolong life. It would be foreign to the purpose of this article to take account of numerous and substantial advances effected in this direction, since its object is to direct attention to a modern idea in scientific medicine which gives promise of working a revolution in methods of practice; an idea which involves new and important principles concerning our conception of the phenomena of life itself.

This modern idea, however, is not founded upon speculative investigation, for the facts it embodies and the conclusions upon which it rests have long been recognized by intelligent physicians on both sides of the Atlantic. The novelty consists merely in the arrangement of these facts, deductions, and conclusions which necessarily lead up to this new departure in the domain of therapeutics. Indeed, in the light furnished by our knowledge of life, chemistry, experimental physiology, pathology, and clinical observation, the truths here to be recorded point to the pressing need for radical changes in methods of treating disease.

Neither does it fall within the province of this paper to criticise or expatiate upon the more recent plans that have met with the approval of the foremost physicians throughout the country. Suffice it to say that the facts presently to be brought forward were practically inconceivable without the knowledge recently acquired relating to antisepsis.

By way of recapitulation, and as a preliminary to the following remarks, it should be stated that although a period of thirty-five years has elapsed since Professor Virchow, the eminent scientist, published his memorable treatise upon "Cellular Pathology," but little, comparatively speaking, has been accomplished since that time. Professor Virchow studied, and later depicted, the retrograde changes occurring in the microscopic cell from disease; but no one has thought it worth while to study and depict the nutritional changes taking place in the living cell as a result of medication. The consequence is, therefore, that very many remedies are given on a speculative basis. True, a considerable number of the medical profession now claim to practise what is termed "rational" medicine, as contra-distinguished from empirical medicine; but when the question is asked as to the precise influence which remedial agents have upon nerve cells and upon protoplasm, no one can be found competent to answer.

For example, enthusiastic claims have been made for electricity, and we have in the State of New York, at least, the anomalous spectacle of the same agent being used both to kill and to cure. And when it is considered that no systematic, thorough, and complete physiological investigations have been made with a view to determine the effect of this powerful agent upon the microscopic cell, we may well pause before accepting literally the conclusions of its active supporters. This reservation is not pressed by reason of an absence of clinical results, but rather for the reason that exact knowledge is still wanting.

However, this method of study has recently attracted the attention of the medical profession through the reports of Professor Hodge, of Clark University. This ingenious experimenter found, on exposing the nerve-cells of honey-bees and pigeons to the stimulating effects of the electric current, that certain appreciable changes occurred; but when the action was long continued, or the current strength was increased beyond a variable point, no characteristic change took place.

The experimental evidence undertaken with a view to determine the physiological effects of remedial agents upon the human economy points to the fact that the true therapeutic value of a drug is by no means to be measured by the mechanical effects produced, and it is to be regretted that the disposition to study results rather than methods and principles has found favor with the profession, because of the vicious circle of reasoning set up and the unstable foundation it affords. It is this circumscribed medical horizon which has so seriously handicapped the present generation of physicians. In surgery the conditions are different, since the results attending the use of antiseptics naturally developed the principles upon which antisepsis depended, and thus a foundation was firmly established for asepsis, or the treatment of wounds by exclusion of the septic material.

The rational treatment of disease should be based upon a knowledge of the effects which medicinal substances produce upon the functions of the cell; and since the cells in different portions of the human economy have special functions to perform, and therefore vary in their structure, it follows that no one remedy is likely to affect all cells in precisely the same manner. It must be evident, therefore, to the most superficial observer, that the rational treatment of disease should be based upon the therapeutics of the cell; and to be efficient we must consider the effects of drugs which are seen as well as those which are unseen, as there is no doubt in the minds of clinicians that metabolic changes occur which are beyond our power to demonstrate or comprehend.

The remarkably favorable results attending the use of cold baths alone in typhoid fever furnish evidence that the economy, unaided by medicines, can withstand and finally eliminate the poison of this disease, and to the reflective mind it shows that the ability to resist disease depends upon the integrity and function of the cell—cell metabolism. Indeed, in view of the large mortality in this disease treated by the routine method as contrasted with the low percentage of fatalities with the bath treatment, we are almost forced to the conclusion that medication has been responsible for more deaths than recoveries.

Mercury and arsenic may be selected to represent the effect which poisons have upon metabolism (tissue-change). Being foreign substances and distributed over the system through the blood and lymph, the organism is intent upon their elimination because they are protoplasmic poisons. While we may trace the former to the liver principally, and the latter to the pulmonary structures or the skin, where they are finally eliminated, their elimination, when given in medical doses, is always attended by more or less cellular activity beyond the normal—usually spoken of as inflammatory action. Wherever found, they act as protoplasmic poisons, and it is this property which gives them their therapeutic virtues—when properly administered.

Cellular therapy is concerned in promoting stimulation without irritation and subsequent depression, which is accomplished by selection of the proper remedy and regulation of the dose. It should be borne in mind that both substances mentioned are active poisons, and that however administered this peculiarity remains, *i.e.*, the minimal dosage lessens the degree of toxicity, but produces no change in the action, although it modifies the effect.

Now, to illustrate the underlying principle of the modern idea which I wish to develop, suppose a physician desires to relieve some chronic cutaneous ailment; he administers arsenic either because he knows it is "good" for such cases, or for another, apparently better, reason, namely, because he is aware that the drug is largely eliminated by the skin, and that through this process of

elimination cellular activity will be increased. Still, this latter reason is extremely unsatisfactory, since it lacks definiteness, and besides, the claim will be set up that it would be a contradiction of physical laws to assume that protoplasmic poisons will stimulate the action of organic cells whose constituent elements are principally this peculiar substance. It will be asserted that a disordered condition of the cutaneous structure means a debilitated or exhausted state of the protoplasm composing the cells, and that whether we consider the physical or nervous mechanism concerned in promoting their activity, it would be equally unfortunate to expose them to the disturbing and depressing influence of a rank poison.

This process of reasoning, however, can easily be set aside as fallacious, since clinicians well know the stimulating effects of arsenic in all cutaneous affections. The scientific explanation appears to be that as all poisons are irritants, the degree of irritation may be so modified by dosage that the irritation is limited to that of mild stimulation. Thus, the prick of a pin is stimulant, while the stab of a bowie-knife may prove fatal.

The idea of treating diseased conditions of the human organism by the exhibition of medicaments which tend to the restoration of the function of the cells in the part affected is a very seductive one, but its practical adaptation is attended with difficulty. The obstacles in the way of its tentative employment in many diseases, however, are not insuperable, owing to our knowledge concerning the physiological action of drugs. Thus, a drug which is eliminated through the skin, kidneys, liver, or pulmonary apparatus, will usually increase the functional activity of those structures, necessarily through augmentation of cellular activity. But there is a limit to stimulation thus produced, because when the dose is large, or the remedy long continued, the initial stimulation will be followed by depression. The basis, therefore, upon which cellular therapy rests, is that of stimulation without irritation, which can be accomplished by the selection of the proper remedy and regulation of the dose.

This brings us to consider the *vis medicatrix naturæ* as a factor in resisting disease, really nothing more than a supposititious entity until within the recent past, when we have begun to fathom the mystery of cell function and cell-life.

In order to render comprehensible what follows, it will be necessary to recapitulate some of the more important conditions dependent upon cell function essential to the enjoyment of health; and this will afford, by reflection, a bird's eye view of the so called *vis medicatrix naturæ* as it is now understood. To maintain good health a person should have a sound digestive apparatus. This trite observation has more significance than would appear at first sight, owing to the important changes which occur after the ingestion of food, changes besides those incident to the conversion and absorption of the different kinds of food stuffs. Reference is had to "digestive leucocytosis"—we may call it a vital process—a phenomenon characterized by the rapid multiplication of the white blood corpuscles, a peculiarity which was also noted by Professor Virchow. Slightly modified, many of these leucocytes become active agents in the destruction of micro-organisms and their products. They enact the *rôle* of scavengers, and are freely distributed throughout the system along with the red blood-copuscles which carry oxygen to every part.

By way of digression, it may be mentioned that this function of the red blood-corpuscles is essential to the welfare of the tissues. The oxygen is taken up by the protoplasm, which in turn gives off carbonic acid and other waste-products, and loaded with this burden the little cells return to the lungs, discharge their cargo, and again take a new supply of oxygen. It is unnecessary to dwell upon this peculiar and interesting function, known as internal respiration, except to note, in passing, the use made of the oxygen by the protoplasmic cells. In the first place, they act as storage-tanks, giving off the gas as required to keep up the functional activity (combustion); in the second place, they can convert this gas into ozone, which is far more active than the oxygen itself.

The presence of oxygen in the blood, in the protoplasm, and in the intercellular fluids is not in itself sufficient to maintain the tissues and fluids of the body in a thoroughly antiseptic condition, owing to the active tissue-change, along with the production of waste products. It remained, therefore, to discover the causes at work which enabled the system to resist disease, and scientists have been richly rewarded by their investigation of the function of the white blood-corpuscle. From present indications this discovery promises to become the missing link in the so-called *vis medicatrix naturæ*, as will presently appear. More than ten years ago Professor Metschnikoff taught that leucocytes or phagocytes performed an important service to the human organism, namely, that they enveloped or surrounded bacteria and destroyed them as well as bacterial products. Within the past year, however, several scientists have demonstrated that leucocytes, through their nucleus, produce a phosphorized proteid termed nuclein, which possesses active germicidal properties. These researches covered not only the test-tube observations, but experimental studies upon animals, and showed conclusively that solutions of nuclein employed in seasonable time would confer immunity against disease, and thus a new factor was added to the modern idea of cellular therapy, that of nuclein therapy.

The development of this modern idea in scientific medicine, as will be apparent from the foregoing brief sketch, is but a question of time, since it hinges altogether upon actual facts, speculative hypotheses being kept entirely in the background. Even now, clinicians and experimental physiologists are earnestly at work in the expectation that they can further advance the art of healing, and doubtless, ere long, we shall have the satisfaction of asserting that practical medicine is really in fact, as well as in name, scientific medicine.

1421 Walnut Street, Philadelphia, Pa.

REPORT OF COMPLICATED CASES INVOLVING UTERUS, TUBES, AND OVARIES, TREATED SUCCESSFULLY; WITH A PLEA FOR CONSERVATIVE SURGERY IN DEALING WITH THESE APPENDAGES.

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This subject is one that demands special attention from the gynecologist of to-day, for operators, although more careful at the present time than for years past, are still prone to remove tubes and ovaries that, in my opinion, could be retained by the patient to very great advantage, if given a chance through conservative surgery to regain their functions. There are, of course, cases of salpingitis which time alone will cure; others that can be and are relieved by the various non operative and conservative methods advised by the specialist; and still others in which abdominal operative measures, either radical or palliative, are imperative to effect a cure.

Now it is not to the first class of cases that I purpose to devote this paper, but to those in which laparotomy is indicated.

Dr. Polk, of this city, deserves the greatest praise for the pioneer steps taken by him in calling our attention to the importance of saving the uterine appendages in cases requiring laparotomy, and in which there is the slightest chance of being conservative. Martin, of Berlin, was also one of the first to call attention to this point. Their work was brought to our attention about four years ago. Dr. Thomas, I believe, has also advocated

the same doctrine and reported as cured cases which required abdominal section, and in which the tubes were not removed, but simply the adhesions were freed and the tubes and ovaries left. Since first hearing Dr. Polk's remarks on this subject, I have made it a practice to save wherever it seems practicable to do so. I am very sorry to see that he at present advises removal of the uterus when the tubes are removed.

I have come to believe, after studying carefully the various cases, both with and without the presence of the menstrual function, that menstruation is essential to a woman's comfort and happiness. In the lower animals we find few if any superfluous organs, and when we contemplate the nervous system of mankind, the complicated and delicate adjustment of which renders it all the more sensitive to interference, we cannot but regard it as essential that the human being should remain intact in the matter of organs exercising a powerful influence on the nervous system. Yet many operators assure their patients that the deprivation of the menstrual function will be attended by no discomfort or loss of happiness, but merely by sterility.

A statement in detail of the symptoms of patients suffering from the effects of loss of the appendages is impracticable within the limits of this article, but I hope at some future time to treat more fully of the matter. Meanwhile I will confine myself to reporting cases in which laparotomy was essential, but in which tubes and ovaries were allowed to remain.

The first, a Mrs. L——, of Brooklyn, was examined by Dr. Bushong, who is associated with me at the Demilt Dispensary, and myself. The uterus was firmly fixed, retroflexed, the tubes and ovaries matted to its side and behind it. The course of treatment followed was several weeks' local tamponading and counter-irritation by Monsel's solution. Finding that this could not relieve, and that it was, in fact, entirely inadequate, I advised strongly that she go to the hospital and submit to operative measures. She seemed reluctant to lose the appendages, but expressed perfect willingness to undergo the operation when informed that the appendages would not be removed unless their removal should be absolutely essential.

The patient was thirty-eight years of age, married, had had two children the last six years before operation. She entered the New York Cancer Hospital, February 4, 1890, and had operation. House staff assisting. Median incision. Uterus retroflexed, bound down, tubes enlarged, congested, and their numerous adhesions aided in holding the uterus down. Ovaries at first could not be found, as the whole pelvic viscera were matted together. All the adhesions were carefully separated by manipulation. The right tube was very much enlarged, and at its fimbriated extremity did not seem pervious. Its canal was entered by cutting in line with the tube toward the uterus. This was laid open for about one and a half inch, and as there was a thin and slightly purulent discharge present within the tube, it was thoroughly cleansed with hot water and a sponge. There was very little hemorrhage. After this a probe was passed down through the tube into the uterus without difficulty. Thorough irrigation was done, and one catgut suture was put in at uterine end of the tubal incision. The left tube was in about the same condition, except there was no purulent-looking fluid, and it was incised in a similar manner; but no probing was attempted, and no suture applied. The ovaries were enlarged and hardened, containing a number of small cysts which were incised with knife, permitting thorough escape of all fluids contained in them. The uterus and appendages now assumed a normal position, but fearing that they might again become attached posteriorly, I stitched the round ligaments to the anterior abdominal wall with four catgut sutures, two on either side. The stitches were taken about half an inch from the uterus, the gut being of a kind that would hold for at least five days. The abdominal wound was closed with usual silk-worm sutures. The uterus at this time was thoroughly forward and held there by the the sutures in round ligaments. Patient had a little tenderness over abdomen, liver, and pelvis for a few days, with some rise of temperature. Bowels were moved third day, as is my custom, with salines. Patient went on and made good recovery, being discharged, with uterus in good position and slightly movable, on March 2, 1890. Two years afterward she became pregnant and came to see me at the dispensary several times during the carrying term. She seemed to carry the child very comfortably. The adhesions formed by suturing the round ligaments to anterior abdominal wall never seemed to cause the slightest trouble. I am curious to know whether the adhesions still exist and are simply stretched, or whether they gave way completely during the ascension of the uterus.

She gave birth to a child January 16, 1893, and Dr. Fulda, of 107 Kent Street, Brooklyn, attended her. She says that the labor was a natural one. The uterus is now in the natural position.

In a similar case, where the patient had never had children, I operated, in 1890, at the Woman's Hospital. In this instance all adhesions were loosened, the tubes cut up, cleansed, etc., and the uterus was held forward, the round ligaments being stitched to the anterior abdominal wall. The patient made a good recovery, though she complained of pelvic pain and had a profuse uterine discharge for some time after the operation, for which she was treated locally until it cleared up. This was undoubtedly a gonorrhœal case. The uterus is now in good position and the patient free from pain, though she has never had children.

Case three, unmarried. Done at Woman's Hospital the past summer. In this case suspected gonorrhœa to be cause of retroflexion and adhesions. Patient had been in hospital a long time, complained of much pain, had recurrent attacks of pelvic peritonitis, and did not improve with treatment. Laparotomy performed. Considerable ascites in abdominal cavity, adhesions all broken up. Uterus held forward by stitching round ligaments to anterior wall. In this instance tubes were not divided and thorough curettement was not done, although it is my custom to do it thoroughly in cases where I suspect gonorrhœa. The uterus was held in good position by operation. Patient did very well indeed for ten days, when, three days after removal of sutures a small abscess appeared in the lower end of the abdominal wound. This was opened at once, and within a few days there developed phlebitis of right leg and she was confined to her bed for some weeks. The position of the uterus was, however, good, and the organ fairly movable. In this case I believe there must have been some infection of the tubes beforehand. I am not aware of the present condition of this patient, but I am not inclined to believe that she has been perfectly relieved. Probably another operation will be necessary to effect a cure.

In dealing with the uterus itself it is also well to be most conservative, and at present we are, I think, too much given to extirpation for a simple fibrous growth of the organ, and even a simple pyosalpinx.

I do not wish to convey the idea that I do not believe in extirpation of the uterus when there is any suspicion of malignancy, or even when the uterus is riddled with pus, for my views in these cases are radical. Immediate and thorough removal of the uterus and all available tissues, is then, in my opinion, the only proper course to pursue. I should like, however, clearly to express myself as being utterly opposed to removal of uterus for a small, simple fibroid, or for a pyosalpinx, unless the uterus itself is thoroughly riddled with the germs. In support of this position I refer to several cases in which a cure has apparently been effected.

Case I.—Mrs. M——, private patient of my friend Dr. J. A. Campbell, with whom I saw patient, in consultation, October, 1892. The case had been previously diagnosed by us, and, after consultation, we concluded to remove the fibroid, and, if possible, without removing

uterus or ovaries, as the patient was most anxious to have children. Laparotomy was done, Dr. Campbell assisting me, early in November, 1892. A large fibroid, weighing six and a half pounds, was removed from the fundus of uterus, care being taken to dissect off the peritoneal coat and turn it over or back. After this was done a curved scissors was used in cutting off as much of the surrounding tissue as possible. In fact it was removed down to uterine tissue. Then the peritoneal flaps that had been sewed were sutured over with a continuous silk stitch, thus covering the raw excavated surface. The ovaries and tubes were fairly normal and were left intact. Another small fibroid, about the size of a small egg, was removed. Patient made an excellent recovery under Dr. Campbell's management, and within a few days Dr. Campbell has reported to me that the patient is pregnant about seven months, and is apparently in first-class condition.

Case II.—Mrs. C——, operated on June, 1893, at Cancer Hospital. Large fibro cystic tumor of ovary and tube, weighing about eight pounds, and consisting principally of solid fibrous tissue, with small, broken-down cavity in its centre. This stump was very large and was treated similarly to the one just mentioned. Patient made a good recovery, and has gained about forty pounds since the removal of the tumor. She is now perfectly well.

I must confess that in this last case my first thought was to extirpate the uterus also, but I believe the woman is very much better for having the uterus and other appendages left. I have shelled out a number of fibroids from uterine wall by doing laparotomy first, then cutting into the uterine wall and shelling fibroid out. After which the two uterine edges are stitched together with continuous catgut or silk suture. My results in a considerable number of these cases have been invariably good, and I can unhesitatingly recommend this procedure.

I have, in addition, removed a number of large fibrous growths from broad ligaments, the first about two years ago in private work, and the last very recently at the Cancer Hospital. The growths ranged in size from a small orange to a man's fist. In most of these cases the tubes and ovaries were apparently normal and were left. But in the last case the tube and ovary on the side where the growth was situated were removed, as they were bruised rather much in the removal of the tumor, which, as can be easily understood from the situation in the broad ligament and extending down below the cervix, was very difficult indeed to remove without removing the uterus and all. All these cases have been satisfactory, and the last one will, I believe, prove a success in every way.

I have also operated successfully in a number of ligamentous cysts. In most of these I have been successful in saving the tubes and ovaries. Much care is always taken, after the removal of the intra ligamentous cysts and fibroids, to stitch the divided surfaces of the broad ligaments together, thus preventing many adhesions and much inflammatory exudate; in other words, leaving the pelvic organs in as normal a condition as possible.

A good rule in conservative surgery, or in abdominal surgery of any kind, is to cover all denuded surfaces wherever there is available tissue with which to do it.

In closing, I would say that as soon as the abdominal cavity is opened, and before systematically attempting removal of any abdominal or pelvic growth, it is of the highest importance, in every case, to make an exact diagnosis of the appendages, uterus, and, in fact, of the general abdominal cavity.

Further, it must never be forgotten that to be conservative in the matter of removing organs that can be saved is the highest and most advanced surgery.

The Medical Officer of Health to the City of London receives a salary of $7,500, and an additional sum of $1,000 as analyst; but he is obliged to give his whole time to the duties of the office.

A CASE OF CHRONIC PERITONITIS, WITH INTESTINAL AND ABDOMINAL FISTULÆ—ENTERORRHAPHY—RECOVERY.[1]

By FREDERICK HOLME WIGGIN, M.D.,

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The three great dangers the surgeon has to encounter in dealing with the abdomen and its viscera are sepsis, hemorrhage, and intestinal adhesions. Of these the last is by no means of the least importance. When not causing immediate death by intestinal obstruction, it frequently defeats the object of surgical interference—the complete restoration of the patient to health; and in many cases, while removing the danger of sepsis, it substitutes that of intestinal obstruction; while the pain is relieved for a short time only, if at all.

The attention of the writer was forcibly drawn to this subject, some years since, by the inspection of an abdominal cavity and its contents in a patient who had died of intestinal obstruction twelve months after an apparently successful operation for pyosalpinx. This examination revealed such extensive adhesion of the intestines that the question arose whether the patient would not have been better off if the original operation had not been performed. The conditions found would have made an operation for the relief of the obstruction, which was by a band low down in the pelvis, impossible. The operation was performed in strict accordance with the technique of the day, and was not followed by any signs of sepsis. The wound healed primarily, the patient's bowels moved early, and in fact she made a rapid recovery. But although her sepsis was relieved, her pain soon returned, and she had at short intervals recurring attacks of intestinal obstruction which were easily overcome by mild measures. Finally, being away from her home when an attack of intestinal obstruction came on, her physician, ignoring her previous history, gave croton-oil and other cathartics; the violent peristalsis induced forced such an amount of gut under a band that it became strangulated, and after some days' delay it became gangrenous and perforated, with a fatal result. A similar history has followed successful operations of this nature so often that the question is frequently asked, Does surgery do what it claims—cure the patient?

The gynecological service at the City Hospital receives, for one reason or another, many cases that have had cœliotomies performed at other New York hospitals, which have eventuated in adhesions, sinuses, and ventral herniæ. They are sent here for secondary operations, having been probably reported in good faith by the operators as "successful" cases. It is for the purpose of calling attention to this subject of intra-peritoneal adhesions, and to offer a suggestion for their prevention, as well as to provoke discussion, that the report of the following case, which has given the title to this paper, is of interest.

A. W——, a female, about twenty-three years of age, was admitted to the Penitentiary Hospital on Blackwell's Island, April 27, 1892. Her history previous to coming under my care in February, 1894, is as follows: She said that after her first menstruation, which took place at the age of thirteen years, she had had an attack of spinal meningitis, and had not menstruated again for two years. Then menstruation had gone on regularly, and had been of the tri weekly type. It had been profuse, lasting seven days, and being accompanied by much pain. She had had no children. One miscarriage at five months had occurred during the summer of 1891. Soon after this she had had a syphilitic eruption, with pains in her bones and an iritis. During the winter of 1890–91 she had had a localized pain in the left inguinal region, which had been more severe at the menstrual periods. There had also begun to be difficulty and pain on defecation.

[1] Read before the Fifth District Branch of the New York State Medical Association, at its Tenth Annual Meeting, held in Brooklyn, May 22, 1894.

In the autumn of 1891, she had received a kick over the seat of pain, and after this the pain had become worse, and had been accompanied by constant headache and nausea. She had then become addicted to the use of morphia and cocaine. Her bowels had moved regularly. It is noted in the hospital records that a vaginal examination, made in May, 1892, showed her uterus to be slightly anteflexed, enlarged, and tender, with a pin-hole os, and the left ovary to be somewhat enlarged. Again, on November 30th, a vaginal examination revealed the left ovary enlarged to the size of a hen's egg, and also a salpingitis of the right tube. Rectal examination disclosed a stricture at two inches from the anus.

On December 14, 1892, the rectal stricture was incised and divulsed, and on January 6, 1893, a cœliotomy was performed, and both tubes and ovaries removed. In breaking up the adhesions about the right tube, it was ruptured, and some yellowish pus escaped into the peritoneal cavity. It was removed by sponges wrung out in a 1 to 20 carbolic acid solution. No further particulars are given except that the wound was closed by silkworm-gut sutures passing through all the layers. Primary union occurred except at one point, near the lower angle of the incision. A week after the operation a probe was introduced at this point, and pus welled up from the wound. On the fourth day after the operation there was a free escape of pus from her rectum. Notwithstanding her sepsis her bodily temperature did not rise above 100°, and no antipyretics were used. On August 14, 1893, it is recorded that the sinus still persisted, and that the patient was suffering much pain. A secondary cœliotomy was performed by the surgeon on duty. After the incision had been made, so many and firm adhesions were found that the wound was closed without any further interference. After the wound had healed, the sinus remained patent, and the former symptoms continued unabated. A vaginal examination made in December, 1893, revealed a large tumor on the patient's right side, which was very painful. The propriety of an operation was considered, but before it was done there was a free discharge of pus per rectum, and the tumor subsided.

On taking charge of this service, February 1st of this year, I found this patient in a deplorable condition, suffering from continuous pelvic pain. Examining her with one hand on the abdomen and the other in the vagina, a decided resistance and fulness were encountered, and there was marked tenderness in the right iliac fossa. The uterus was fixed. The sinus at the lower angle of the old cicatrix was patent, and discharged pus. A rectal examination revealed a stricture of large calibre, and an ulceration at two inches from the anus. The patient earnestly requested that something be done for her relief. After careful consideration of the case, operation was decided upon, and performed on February 14th.

The incision was made in the line of the old cicatrix, splitting the sinus, which was found to pass into a cavity formed by adhesions of the intestines to the anterior abdominal wall, to themselves, and to the uterus, and bounded in front by the bladder. Into this cavity was poured a fifteen-volume solution of hydrogen dioxide, and after this had been allowed to remain for a few minutes, it was sponged away and the adhesions broken up. As the intestine was freed from the right side of the uterus, a fistulous opening was discovered, which was closed as soon as the intestine had been sufficiently freed to allow of its being brought outside of the abdomen. This closure was effected by scarifying the peritoneal coat of the upper side, the lower side being already denuded, and by introducing a single row of Lembert suture. The appendix was adherent low down in the right iliac fossa, and was freed, but not removed. After the adhesions which formed this abscess cavity had been broken up the intestines were found to be very much tangled and matted together. These adhesions were broken up partly by the finger, and partly by dissection. The omentum, which was adherent, was ligated and removed. At one point the peritoneal coat of the intestine was ruptured over an area measuring $\frac{1}{4} \times \frac{1}{2}$ of an inch. It was repaired by Lembert sutures. The hydrogen dioxide was freely poured into the peritoneal cavity, and after a little delay, the cavity was flushed with normal salt solution (0.6 per cent.), and the cavity left full of the same. The temperature of the solution was 115° F. The edges of the old sinus were scraped with the sharp spoon, and the wound closed with silkworm-gut sutures passing through all the layers. No drainage was employed. The time occupied by the operation was two hours. Only eight ounces of ether were used, but the patient took the ether badly, and this much prolonged the operation. Although suffering from shock, she rallied well on the introduction of hot saline solution into the abdominal cavity, aided by the hypodermic injections of glonoin and strychnia. Her bowels moved shortly after the conclusion of the operation, and again on the third day, although morphia was employed more or less freely. No cathartics were given after this, her bowels moved regularly several times a day. The patient had very little nausea. Beef peptonoids were given within twelve hours after the operation, and were followed by peptonized milk and semi liquid food on the fourth day. Her temperature, pulse, and respiration became normal on the sixth day. Her pain was relieved. The wound healed primarily throughout. Following the operation, there was a decided improvement in her general appearance. On March 20th, it was noted that she was in better health than she had been for two years previously. A vaginal examination at this time showed the uterus to be freely movable. There was no evidence of adhesions or of tenderness in the pelvis. Six weeks after the operation the patient was in sufficiently good condition to submit to the removal of three inches of her rectum, and she is now in good health, with the exception of some nervous disorder.

As the technique has been alluded to, it may be well to state that in this, as well as in all other abdominal operations performed within the past eighteen months by the writer, all chemicals except hydrogen dioxide have been avoided, reliance being placed entirely on sterilization of instruments by boiling, and on the use of sterilized salt solution, with the avoidance of the use of sponges. The main point of interest in this case, aside from the number of cœliotomies submitted to by this patient, and the severity of the last one, is the free use of the hydrogen dioxide for the purpose of destroying the old abscess cavity before breaking up the adhesions, and the closing of the abdominal cavity after filling it with the saline solution, for the definite purpose of preventing the formation of new adhesions. Further experience gathered during the past winter has confirmed the claim made in a former paper, that closing the abdominal cavity after filling it with hot sterilized salt solution, lessens shock, prevents the formation of adhesions, aids in the readjustment of the intestine and omentum to their proper position, and lessens the danger of septic peritonitis. To this I may add that after operations where it is so used there is little nausea, and an absence of the insatiable thirst which formerly tormented these patients, and that the bowels act more freely, often of their own accord, in spite of the fact that morphia is used whenever indicated on account of restlessness. My opinion is confirmed in the belief that hydrogen dioxide is a safe and sure disinfectant for the peritoneal cavity. I have used it with satisfactory results in more than twenty cases.

In conclusion, I would like to call attention to the fact that, although the duration of the operation was two hours, only eight ounces of ether were used. The shock following an operation is, in my experience, more dependent on the amount of ether employed than on the duration of the operation, although this is of importance. Had not experience given me faith that by the use of salt solution adhesions once broken up could be prevented from reforming, that in hydrogen dioxide there is a safe and certain weapon for preventing and overcoming sepsis in the peritoneal cavity, and that with the

closed ether inhaler a long operation could be performed with the minimum amount of ether, and therefore with little shock, the above described operation would not have been justifiable, and would not have been undertaken.

55 West Thirty-sixth Street.

INTERNAL URETHROTOMY FOR STRICTURE.

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In discussing the treatment of stricture of the urethra this paper concerns organic stricture only; but before entering upon its treatment proper, we will recapitulate briefly the pathology of stricture, and look casually at the anatomy of the penis; by so doing we will be better able to treat intelligently this disease. Its idiopathic etiology in vastly the majority of cases is gonorrhœa, though we do have some cases from traumatism to the perineum or urethra, by say a kick, a fall astride a box or fence, a bruise while riding bare-back, or on the horn of a saddle, by the use of imperfect instruments, or breaking one in the urethra. It is claimed by some, too, that strictures are caused by too strong injections. I believe it is possible to make an injection strong enough to produce a stricture by using some very powerful caustic, but in meeting the indications of a gonorrhœa, this is but rarely if ever done, the subsequent stricture to these gonorrhœa injections being only coincident. I use at pleasure for cystitis a ten, fifteen, or even twenty grain to the ounce argent. nitrosæ solution, injected into the bladder after a thorough catheterization, and allow the patient to void it through the urethra, without any evil effects. It is what, then, that produces it in gonorrhœa? The urethritis *per se*. Eighty five per cent. of all strictures are so caused.

The male urethra is about eight inches long, and divided into the prostatic (one and one-half inch), membranous (three-quarter inch), and spongy or pendulous portion which occupies the remainder of its length. It is flexible and of an unequal breadth at each of the different divisions, being broadest at the prostatic, narrower at the spongy, and narrowest at the membranous portion, and any portion of the urethra that is not dilatable is strictured. The urethra is related to the corpora cavernosa as a ramrod is to the barrel of a double-barrelled shotgun, the corpora cavernosa incorporating about one-third the circumference of same when distended, with its sides not in apposition as the meatus would seem to indicate, but the roof and floor kiss each other in perfect co-aptation.

Stricture may be of such a mild type as only to involve a thickening of the mucous membrane, or the inflammatory process may lead out and invade the delicate erectile tissue, thereby causing a proliferation of the connective-tissue element and an increase in the thickness, density, and non-elasticity of this membrane at the site of stricture, which may be single or multiple. This pathological process takes place just beneath the mucous membrane, and not on its surface, as was formerly believed, and as the stricture grows older this transverse non-elastic band grows tighter and contracts more firmly. We have linear, annular, and tortuous strictures. They are also divided into passable and impassable, according to their degree of perviousness to a filiform bougie; of course, if this instrument can be made to enter, it falls under the former class, but if this be impossible, under the latter.

About seventy-five per cent. of strictures are single. Otis places the location of the majority of strictures within one and one quarter inch of the meatus, the next most common site being about the middle of the pendulous urethra. Thomas has failed to find in two hundred and seventy autopsies, or in any patient, a prostatic stricture, *i.e.*, a stricture within one and a half inch of the bladder, that portion also which lies beneath and behind the arch of the pubis, and which therefore from the field of operation is most obscure and difficult of access. Walsh found in one hundred and eighty-five cases one stricture of the membranous urethra that involved also a portion of the prostatic urethra, so we may very safely eliminate this portion of the urethra from the stricture field; and the fact that this can be done is but another trace of the Almighty's wise and sympathizing hand, for even though he has rightfully cursed the nation with this malady, he places it within comparatively easy reach of the surgeon. Strictures do occur, however, sometimes as far back as the posterior membranous urethra, *i.e.*, four and one-half to six inches from the meatus.

It is a popular idea with the majority of our profession (prejudiced by results antedating antisepsis) that the cutting operation should be the last resort, that it should be used when all else has failed, as the last alternative, and the instruments recommended for this little operation are almost too numerous to mention; but among the most prominent are filiform bougies, bougies not filiform, sounds, guides, probes, rapid dilators, urethrotomes, directors meatometa, urethrometa, bistouries, etc. I think the reason the average practitioner doesn't operate on his own cases, but instead takes them to a surgeon or a specialist, is because whenever the patient is presented the operator shoves under the practitioner's nose such an elaborate display of mysterious instruments, all of which the latter, without thinking, believes to be necessary to make the examination or perform the operation, that he himself is humiliated, and the magnitude of the operation proportionately exaggerated. I have a record of thirty-nine urethrotomies performed by myself, thirty five of which were internal, including four impassable; the remaining four were external urethrotomies. The latter were among the first operations on the urethra that I ever did; they were two with and two without a guide, one of which gave me as much trouble during the performance of the operation, and caused me as much apprehension during the after treatment, as any surgery I have ever participated in. I have since become so impressed in favor of the internal operation that I have never yet had occasion to return to it again. I have treated a great many strictures by dilatation, but so far as my experience goes it has only been palliative, for most invariably the patient would return again during the course of a few years with his same old trouble, notwithstanding the fact that he had been taught and ordered to use the bougie himself once or twice a month. This was not done, of course, or it could not have possibly closed; but at the same time, as long as it is necessary to use an instrument this disease cannot be considered cured. I find that internal urethrotomy gives the best results and is justifiable in any case occupying the pendulous urethra, and all strictures that I have yet seen in this locality are accessible by the method which I am about to detail, which requires a set of sounds, a bistoury, grooved director, and a set of bulbous bougies or urethrometer; this latter instrument, however, is not essential, though it may often be used very conveniently in locating strictures and testing their extent. It, at any rate, is a very ingenious little instrument, and reflects credit on its inventor, Professor Otis. It is generally conceded by the profession, I believe, that bougies or sounds should be used if it be possible to pass one; if repeated efforts be made without avail, however, then external urethrotomy as the last alternative must be resorted to; but before proceeding with this cutting operation, while the patient is yet under the anæsthetic, they say another attempt must be made at introducing a filiform bougie, which, if successful, defers the operation perhaps indefinitely. For an external urethrotomy it is best to make an incision two and a half or three inches long, and the greatest precautionary measures must be observed if performed without a guide, else serious damage might be inflicted; the wound is then left to heal by granulation. All impassable strictures are said to be suitable cases

for this operation, but none else. The wound made in an external urethrotomy is necessarily large, the operation a long and tedious one, two hours at times may be employed in performing it, fever runs high; it is with difficulty the patient is kept clean, and the operation is not at all free from danger. Wyeth, Otis, Thompson, and quite a number of others have invented instruments for internal urethrotomies; these instruments are necessarily large, heavy, and therefore cumbersome; the blade of none of them extends beyond the shaft, and therefore are not intended for impassable strictures; they do beautiful work, however, on strictures admitting a No. 7 sound.

The bistoury which I use has a perfectly straight shank, seven inches long, with a blade extending from its point one-half inch back, and presenting not exceeding one-quarter of an inch beyond the front surface of the shank; the back of the blade is exactly on a straight line with the back of the shaft, even to its point. My grooved director is seven inches long and fork shaped, with the handle of the fork representing the groove of director and the prongs the handle; it is made of sufficient strength to admit of considerable pressure without bending; the strength of the director, however, must not lie in its back, but sides only, as the back must be thin in order to allow the back of the knife to approach as nearly as possible the roof of the urethra, thus enabling the operator to incise the stricture through its entire diameter. Now, the patient having been placed in the usual position, and a stricture diagnosed, if it be meatal surgeons all agree that it should be cut with a bistoury, and in this locality a director is not indicated; but if it be lower, this latter instrument becomes imperative. With the grooved director and bistoury which I have described, all pendulous strictures have fallen in the field of internal urethrotomy and easily available. The penis is held at right angles to the body with the left hand of an assistant, while with his right he holds the director firmly against its roof, with the groove of director presenting toward the patient's feet, the penis in the meanwhile being kept somewhat extended. If the stricture be passable, the operator then, with the bistoury in his right hand, glides it down the director until in the locality of the stricture, this point being marked by the thumb and second finger of his left hand, which press gently the sides of corpora cavernosa in aiding to keep it perfectly steady, while the index finger is held in the same locality but against corpora spongiosa to direct the blade of the knife, which may plainly be felt as it cuts through the stricture, first in front, then on either side. If the stricture be impassable, the director is introduced until its blunt end comes in contact with the face of the stricture, the penis being held as before if in the upper pendulous portion; but if lower and possibly in the anterior membranous urethra, after the director and knife have been introduced beyond suspensory ligament, the penis is tilted forward to an angle of about 45°, the director pressed firmly in the direction of symphysis pubis and downward until in contact with the stricture; the knife is now pressed well back against the director, then downward until the resisting stricture yields; three incisions are then made as before described. By actual experiment on the cadaver, I find that I am able to reach in most cases by this means the membranous urethra. This operation is extremely simple, very easy, and usually requires but five or ten minutes, is performed with a very limited, inexpensive outlay of instruments, and I never expect an untoward result; is more cleanly, as the urine is voided per viam naturalem instead of through a vicarious passage in a very clumsy location. The main points to be guarded are, first, to have a reliable assistant, who will hold the penis and director perfectly steady and exactly as directed by the operator, who must himself see to it that the end of director is in contact with face of stricture, that it is in perfect line with the penis, and be very careful to pass his knife exactly in that line. After-treatment consists in first washing out the urethra with peroxide hydrogen, then injecting copiously with gr. vj. to ℥ j. of boracic acid; this is done seven or eight times during twenty four hours, until all discharge ceases, and a large sound introduced once in four or five days for the first month, once a week the second month, once in two weeks the third, and during the next two months twice or three times ought to suffice. I usually, at the same time, put the patient on some alkaline diuretic, santal midy being my preference, which is also an astringent antiseptic, having special action on mucous surfaces. In conclusion, I would like to say that I have succeeded in passing filiform bougies that had resisted repeated previous attempts, by instructing the patient to allow his bladder to become distended with urine, then thoroughly cocainizing the urethra and allowing him to void his urine while the attempt is being made; this method is especially applicable to cases of valve stricture. In doing an external perineal urethrotomy once (without a guide) that was baffling entirely my skill, I found that much aid was given by the introduction of a bougie from behind after a suprapubic cystotomy had been performed. I cut strictures indiscriminately as regards to class, and always in three directions; a sound corresponding with the full capacity of the urethra should be used at once. This operation may be performed with pain reduced to a minimum by the use of cocaine and Bumstead's deep urethral syringe. The incisions must be made in the long axis of the penis; when they heal, they do so with an elliptical patch for each incision, thus increasing the calibre of the urethra by the insertion of a new-formed tissue which is pathologically different to that of the stricture. It intercepts the force of this contracting band and establishes another in a direction that rather favors the normal calibre of the urethra.

Clinical Department.

A CASE OF NON-HEREDITARY FRIEDREICH'S DISEASE.[1]

By CHARLES E. NAMMACK, M.D.,

ATTENDING PHYSICIAN TO NEW YORK HOSPITAL, OUT-PATIENT DEPARTMENT.

After the elaborate critical digest of Ladame,[2] supplemented as it was by the scholarly article of Byron Bramwell in his magnificent "Atlas of Clinical Medicine,"[3] it would seem that little could be added to the literature of Friedreich's ataxia. Yet, Bramwell states that very few isolated cases have been recorded, and thinks it "not unlikely that the isolated cases (cases in which only one member of the family is affected) pass unrecognized." This view is shared by Ladame, and emphasized recently by the publication of an isolated case by Hector Mackenzie,[4] who states that the alternative title, hereditary ataxia, for Friedreich's disease may have something to do with preventing its due recognition.

Eight days before the writer saw Mackenzie's article, a little girl was brought from Yonkers to the New York Hospital with the following interesting personal history:

Mary B——, aged fourteen, born after a normal labor, began to have unsteadiness in walking when she was five and a half years of age. Previous to this time she had an attack of measles at the age of two and a half years, a second attack of measles while it was prevalent in the family at her fifth year, and six months later had scarlet fever, followed by the unsteady gait. Her parents think that diphtheria did not accompany the scarlatina. Her gait has become progressively worse since. Some time after the development of ataxia in her lower limbs, she was annoyed by jerky movements of hands and arms when writing, and was finally obliged to leave school. She had headache every morning, and occasional shooting pains in her legs. She has had nocturnal enuresis since infancy, but lately has been troubled by incontinence in the daytime also. Her case has been variously

[1] Presented at the New York Academy of Medicine, Section on Pediatrics, April 12, 1894.
[2] Brain, 1890.
[3] Vol. I., Part I., Edinburgh University Press, 1891.
[4] American Journal of the Medical Sciences, April, 1894

diagnosticated as diphtheritic multiple neuritis, chorea, precocious locomotor ataxia from inherited syphilis, etc. This is not surprising when we reflect that Friedreich's ataxia is one of the rarest of all known forms of nerve diseases, that the great majority of medical men have never had the opportunity of seeing it, and further, that they do not expect to meet with it in an isolated form.[1]

This child's family history is unusually good. She is the oldest of seven children. One baby died at five months of "inward spasms due to teething." The other five are living and healthy. Both parents accompanied her to the hospital and were apparently perfectly sound and healthy. Three other children in the family have now passed the age at which the unsteady gait began in Mary, without showing any symptom of it, although their immunity cannot be guaranteed from this, as stated by Soca.[2] Many exceptions to the rule formulated by him are on record.[3] Neither parent knew of any neurotic or degenerative tendency among the grandparents, uncles, aunts, or cousins, except that one paternal aunt died at the age of twenty-two of "consumption of bowels," after an illness of three years. Another paternal aunt died of endocarditis, contracted during the blizzard of 1888. Four aunts and uncles are living and well. Consanguinity did not exist between Mary's parents, nor had either ever suffered from alcoholism, Bright's disease, or syphilis. The writer considers it improbable that her conception might have occurred while either parent was under the influence of alcohol. Mother has had no stillbirths or miscarriages. There is no knowledge that any near relative has ever been ataxic or club-footed.

	Age if Living	Condition of Health.	Age at Death.	Cause of Death.	How long Sick.
Father	39	Excellent.			
Mother	37	Excellent.			
Brothers, Francis	2	Excellent.	5 mo.	Convulsions?	1 day.
Brothers, Joseph	4	Excellent.			
Sisters, Mary	14	Friedreich's Disease.			8½ yr's.
Sisters, Alice	12	Excellent.			
Sisters, Rose	10	Excellent.			
Sisters, Anne	8	Excellent.			
Father's Mother	77	Excellent.			
Father's Father	80	Excellent.			
Mother's Mother	76	Excellent.			
Mother's Father			53 yr's.	Pneumonia.	10 d'ys.

The symptomatology of the case at present is as follows: The gait is very unsteady and rolling in character, and child is unable to stand with the eyes closed. Muscular power in the legs is good, considering that the child cannot actively exercise. Dynamometer records thirty in right hand, and twenty-two in left hand. Hand grasp seems almost as strong as in other children of her age. The knee-jerks are absolutely lost. She has some ataxia in the upper limbs, but can thread a needle, and her manner of picking up a needle from the table has not the so-called "bird of prey" movement.[4] She presents the characteristic foot deformity of this disease. Each foot is stumpy and short, and appears to be compressed from before backward in the antero posterior diameter. The instep is highly arched and the dorsum of the foot very prominent. The first phalanges, especially of the great toe, are over-extended and the tendons of the extensor proprius pollicis muscles stand prominently out. The feet are cold, and of a purplish color. Lateral curvature of the spine is present. The speech is low-toned, monotonous, and harsh, but not "scanning," as in multiple sclerosis. Nystagmus is evident when eyes are moved laterally or upward, or when the object is fixed.

Pupils are equal, of medium size, and respond both to light and to accommodation. No oculo-motor paralysis. Ophthalmoscopic examination by Dr. Leroy Pope Walker, shows that the temporal half of each optic nerve is very pale and the nutrient vessels diminished. This condition is considered to be fairly attributable to the child's evident anæmia. Choreic like twitchings are not present now, but the history shows that they existed in an earlier stage of case, and more than one physician has treated the child for chorea. Her facial expression is anxious, rather than vacant. She does not have the attacks of impulsive laughter often noticed in this disease. She suffers from palpitation of the heart on walking, but has no valvular lesion. Anæmic bruit is present in vessels of neck. Her headache is distinctly frontal. She does not feel dizzy in walking, but is unable to co-ordinate her movements. Sensibility of the skin to touch, heat and cold, and pain is found to be unimpaired, although not exhaustively tested. Special senses not affected. Child is bright and intelligent, and not irascible. Her sense of the posture of limbs is good.

The clinical assistant who first saw the case at the hospital considered it to be locomotor ataxia without Argyll-Robertson pupil, a not impossible combination. The writer changed the diagnosis to that of cerebellar tumor without increased knee-jerk, which is also a possibility. But the ophthalmoscope showing absence of optic neuritis or of post-neuritic atrophy, a more careful review of the case was made and the correct diagnosis arrived at.

The pathological anatomy and prognosis are so fully treated in the articles of Ladame and Bramwell as to render unnecessary any mention in this communication. The treatment is the same as that of locomotor ataxia. Suspension has been tried in some of the recorded cases without any benefit. Lena, an Italian writer, has reported[1] two cases treated by injections of organic nervous extracts after the method of Dr. C. Paul.

Non hereditary cases may occur with more frequency than is usually supposed. The "Index Medicus" for 1893 gives sixteen references to twenty three cases of Friedreich's disease, of which four were isolated cases, no other member of the family being affected. Thus Destree[2] records a case, aged twenty-one, brothers and sisters healthy, father an alcoholic, died of consumption, one paternal uncle epileptic. Senator[3] had a case in one of five sisters.

McCaw[4] publishes a case in which the hereditary history broke down at every turn. Strong history of tubercle in this family Chauffard[5] presents an isolated case which began at the remarkably early age of three and one half years.

To these can now be added Mackenzie's case and the writer's. It would seem to be desirable that other non-hereditary cases should be reported, in order to eradicate the fixed idea that Friedreich's ataxia is necessarily a family disease. The lesion in Friedreich's disease is a combined sclerosis of certain tracts in the posterior and lateral columns of the cord, together with the vesicular columns of Clarke in the gray matter, and the posterior roots. The entire cord is also congenitally smaller than the normal. The diseases with which it is likely to be confounded are locomotor ataxia, insular sclerosis, ataxic paraplegia, chorea, and cerebellar tumor. The differential diagnosis is clearly given in the article by Bramwell previously alluded to.

It has been suggested by one writer[6] that lateral curvature of the spine may give rise by pressure to cord symptoms, but a study of the case cited will show many and marked differences in its symptomatology from that of Friedreich's ataxia. Orthopedists generally do not accept the conclusions therein advanced, but agree with Bradford and Lovett that lateral curvature never gives rise to cord symptoms.[7] Although the author predicted that literature would soon teem with cases similar to his, the ensuing two years have not brought to light the expected inundation.

29 East Twenty-fourth Street.

[1] Bramwell: Atlas Clinical Medicine, p. 42.
[2] Ladame: Brain, 1890. [3] Bramwell: Atlas, p. 35.
[4] Brain, 1890, p. 478.

[1] Morgagni: Milano, 1892, xxxiv., 630–652.
[2] Journal de Med., Chir. et Pharmacol. Bruxelles, 1892, p. 773.
[3] Berlin klin. Wochenschrift, 1893 p. 489.
[4] London Lancet, 1893 ii., 484.
[5] Semaine Médicale. Paris, 1893, xiii.. 409–411.
[6] Medical Record, May 28, 1892, p. 604.
[7] Ibid., p. 605.

INCONTINENCE OF URINE AND FÆCES, CURED BY CIRCUMCISION.

By H. L. ROSENBERRY, M.D.,

MENOMINEE, MICH.

I WISH to report a case that has been very instructive to me. In September, 1893, I was called to see a child with incontinence of urine and fæces. The child seemed to be as healthful as the average four-year old, and aside from this difficulty had never taken any medicine. In making an examination I discovered what had apparantly been overlooked by the former medical attendants, an elongated prepuce. I said to the parents that the child should be circumcised without delay, as that might account for the dribbling of the urine, but supposed there was entire absence of the sphincter ani.

On the following day the child was anæsthetized and the circumcision performed. It healed nicely. At the time of the operation a digital examination revealed a patulous anus with no sign of a sphincter muscle. Supposing it to be absent I, of course, thought there would be no help for the incontinence of the fæces. When complete healing had taken place the bowel trouble entirely subsided, but he still had trouble with the retention of urine. I tried various remedies, and finally used the atropia ($\frac{1}{100}$ Wyeth's hypodermic) tablets, with instruction to cease when dryness of the throat appeared. The child is more robust than before and has fully recovered.

I am at loss to explain the process, but simply relate it as a fact. Will your readers cite to me similar cases if they know of such?

AN UNUSUAL ACCIDENT TO THE RESPIRATORY TRACT.

By M. D. BRIGGS, M.D.,

CHAMPLAIN, N. Y.

ON the evening of January 25, 1894, Ernest L——, aged seven, was brought to my office by his parents with the following history: About one hour previously, namely about 6 P.M., while chewing a mouthful of dried peas with which he had been playing, he had a little grievance and commenced crying. In the midst of his sobbing he sucked some of the partially chewed peas into his windpipe, and at once began to choke and strangle. His father immediately seized him and used such measures as he was able for his relief, such as clearing out the mouth and throat, inverting the child, and thumping his back. He recovered his breath, after which an emetic was given and the child brought with all haste to my office, something over two miles.

On examination I found him breathing easily and quietly, but the stethoscope revealed plainly the fact that some of the material had entered the respiratory tract. The laryngoscope was unsatisfactory, as the attempt to use it brought on a severe attack of dyspnœa, which subsided after a moment or two. Realizing the gravity of the case, I advised taking the child by first train to Montreal, as it could be easily reached in two or three hours, hoping that something there might be done to save him. They decided to take my advice and left my office, while I prepared to accompany them. In about five minutes a messenger came for me in great haste from a neighboring store where they had stopped to make a purchase.

I found the boy in a state of complete apnœa, cyanosed, pulseless, and apparently dead. Finding the heart still beating I immediately laid him on the counter, in a position to do a quick tracheotomy. I had bared the throat, found my landmarks, and in another instant would have made the incision, when there came a slight gasp. After a few seconds another came, and I laid down my knife. In a few minutes he was breathing fairly well, but lay in a semi-conscious condition. There was no further thought of Montreal, nor even of taking him home. A room was secured at the nearest hotel and he was removed thither. Another severe attack of suffocation came on as soon as we reached the hotel, in which the boy went through another terrible death struggle, and lay apparently dead on the bed, only to again revive for a repetition of the dreadful ordeal, for these attacks of laryngeal spasm occurred again and again.

Dr. J. M. Hackett and Dr. L. C. Dodge were called in consultation. All concurred in an almost hopeless prognosis. Tracheotomy seemed a forlorn hope, and was considered only as a measure for the relief of the laryngismus. The parents desired anything that would promise even a measure of relief. So I did a tracheotomy with careful attention to details. There was no more spasm of the glottis, but the operation gave no relief to the dyspnœa and cyanosis, which steadily increased. Sharp hissing sounds could be heard through the tracheotomy tube coming up from below. Death took place about twenty-one hours from the time of the accidental entrance of the partially masticated peas into the respiratory tract. An autopsy could not be obtained.

A FAMILY HISTORY OF DIABETES.

By GEORGE A. PHILLIPS, M.D.,

ELLSWORTH, ME.

A BOY eight years of age was seen by me in January of this year, with well-marked symptoms of diabetes mellitus, excessive thirst, emaciation, urinating four to six quarts daily, specific gravity of urine 1.046, with sugar in considerable quantities. The interest of the case lies in the fact that three brothers of his mother died of the same disease, their ages respectively three, eight, and seventeen, the diagnosis almost established by the history obtained by a member of the family was confirmed by communications from Dr. Thomas, of Brewer, Me., and Dr. F. O. Perry, of Orland, Me., the physicians who attended the children who died. The mother of the child whose history is given above, and a sister to those who died, has occasional symptoms of the same disease. There were five children, three dying of diabetes, one of typhoid fever, and the mother of child referred to.

HAVE THE RED BLOOD CORPUSCLES AMŒBOID MOVEMENT.

By WILLIAM MOSER, M.D.,

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IT is generally supposed that the red blood corpuscle is a "fixed" cell, *i.e.*, a cell not capable of amœboid motion like the white blood corpuscle. My observations are not in accord with this general belief. It is true that the red blood corpuscle, when obtained fresh (by pricking the finger-tip) and examined under the microscope, will not exhibit any property of amœboid movement, much less would it do this if the blood was heated and stained. The blood corpuscles when examined fresh rapidly become dehydrated, a dark ring soon forms on their outer border, looking like a membrane, many of them become shrivelled, "cremated," the cell soon dies. But in certain media like the urine they retain their vitality and certain fundamental differences can be noted. In over one hundred specimens of nephritic urine, containing blood-cells, I was positive that in every instance I could detect in most of the red blood-cells movement. In some cells I could see how the cell would retract in certain places, some becoming semilunar in shape, others could be seen taking on various shapes, reminding one of the condition known as "poikilocytosis" seen so frequently in progressive pernicious anæmia. Again the ordinary round shape would become long and narrow, and by waiting a few seconds it would again regain its rounded outline. All this could be seen and demonstrated in urine containing many blood cells. In short, it behooves us to examine the red blood corpuscle in the urine more closely.

158 ROSS STREET, BROOKLYN.

Progress of Medical Science.

Bacteria in Human Milk.—Dr. Ringel contributes the report of a series of investigations upon the bacteria found in human milk. Various observers had reported having found the staphylococcus aureus and albus, as well as the streptococcus, both in healthy milk and in that from mothers suffering from puerperal fever. Escherich examined 25 women. Of these, 24 specimens were sterile and 1 contained bacilli. He again examined 13 with puerperal fever, and found staphylococcus in 12; 4 being of the white and yellow variety intermixed; 8 the white only, and 1 of an uncertain form. Cohn and Neumann experimented on 43 cases of milk from healthy women, and found 36 containing staphylococcus albus, 1 staphylococcus aureus and pyogenes, 3 staphylococcus pyogenes albus and streptococcus pyogenes; in 2 all the above forms were united. The writer made a series of investigations, drawing and using milk from the deeper parts of the breast only, the experiments being made under the strictest antiseptic precautions. The milk was taken from 12 healthy and 13 unhealthy patients. The results were as follows: 3 specimens were sterile; 17 specimens contained staphylococcus pyogenes albus; 2 specimens contained staphylococcus pyogenes aureus; 1 specimen contained staphylococcus pyogenes albus and aureus; 2 specimens contained staphylococcus pyogenes albus and streptococcus pyogenes. An examination of the mouths of nursing infants revealed corresponding bacteria in their secretions.—*The American Journal of the Medical Sciences.*

A New Method of Using Cocaine for Local Anæsthesia.—Krogius (*Centralbl. f. Chir.*, No. 11, 1894) describes a new method of producing cocaine analgesia, which is based on the fact that, when a solution of this agent is injected into the subcutaneous tissue near to a nerve-trunk, it causes loss of sensation over a large zone corresponding to the peripheral distribution of this nerve. In order to reach the selected nerve-trunk with certainty, and to apply the cocaine to several of its branches at the same time, the author, in injecting the subcutaneous tissue, passes his needle across the long axis of the limb, and as the needle is thrust along, the solution is gradually discharged. An injection made in this way across the root of a finger will, in the course of ten minutes, result in analgesia of the whole digit, not of the skin only, but also of the tendons, the periosteum, and all the deep structures. If one or two injections be made transversely near the wrist, a considerable extent of the palm of the hand may be thus rendered analgesic. The sensibility of the ulnar side of the hand as far as the roots of the last two fingers may, it is stated, be abolished by injecting a solution of cocaine over the ulnar nerve at the back of the elbow. By injecting over both supra-orbital notches, analgesia may be produced in the whole of the middle portion of the forehead. The analgesia caused by this method of using cocaine attains its greatest intensity and extent from five to ten minutes after the injection, and is maintained for a quarter of an hour or even longer. The author injects only a weak (two per cent.) solution of cocaine, and keeps the patient recumbent for at least a quarter of an hour after the operation. This method has been practised with success at Helsingfors, in two hundred minor operations, such as amputation of the fingers and toes, excision of palmar fascia, and phimosis.

Compression of the Umbilical Cord During Delivery by Forceps.—Dr. Swayne has recently again directed attention to the danger to which the child is exposed during delivery by forceps, from pressure of the extremities of the blades on the umbilical cord, should it be so situated as to be compressed when the forceps has been applied (*The Lancet*). In a former communication on the subject Dr. Swayne instanced 153 cases of forceps delivery. In 23 of these the child was either born dead, or died soon after delivery; in 4 out of these 23 cases he attributed the death to compression of the cord by the forceps—that is to say, that this injurious compression had been noticed in the proportion of once in 38 cases. Since the time when this series of cases was published, Dr. Swayne has had 71 forceps cases, with 10 deaths of infants, and among these 10 stillbirths there were 2 cases in which the child's death was due to pressure of the forceps on the cord. In this second series, then, the accident in question occurred once in 35 cases—not very different from the frequency noted in the preceding series. Spiegelberg's estimate of the fœtal mortality in forceps cases is seventeen per cent. It certainly seems to be the fact, as Dr. Swayne says, that this particular danger—that is to say, compression of the umbilical cord by the forceps—has not received perhaps so much attention as it deserves. Dr. Swayne still agrees with a passage which he quotes from a paper by Dr. Galabin, published in 1877, namely, "that it has not been shown that the majority, or any considerable proportion, of the stillbirths which now occur in Britain would be preventable by a more timely resort to forceps."

Skin-grafting for Keloid.—Broca recently excised from the back of the hand and thumb an extensive keloid following a burn. The growth was half a centimetre in thickness, and held the hand at a right angle to the forearm. A flap from the abdomen was then grafted upon the hand and its pedicle severed in thirteen days after the operation. There were no drawbacks of any kind, and complete motion in the hand and wrist was restored.

Ingrowing Hairs.—Dr. Guthrie calls attention to a condition of ingrowing hairs, which presents itself in the form of bluish-white pimples, varying in size from a pin's head to a small pea, situated usually about the chin where the beard grows the thickest. Careful inspection of the unshaved chin and cheeks will show here and there the presence of "giant hairs." These are dark in color, and as thick as hog's bristles. The slightest traction with forceps suffices to painlessly remove them. The thickening is due to the deposit of a dark, soft material, which envelops the hair throughout its extent. This layer can be scraped off, and is soluble in liquor potassæ. The hair itself is also thickened, and its structure is blurred and indistinct. It is probable that the little bluish-white pimples form by the growing within the hair-follicle of what remains of a broken, thickened, and brittle hair. The condition occurs most commonly on a bearded face, but it is sometimes observed in other situations, as the axilla, the pubes, the periphery of the hairy scalp. Under the latter circumstances the condition is dependent rather on a blockage of the orifice of the hair-follicle than upon disease of the hair itself. Sometimes, instead of a single hair, such a follicle will contain a minute ring-shaped tress, composed of a dozen or more fine hairs. These are particularly common about the under surface of the penis, where they often suppurate and discharge a foul smelling mixture of pus and decayed sebaceous matter. In treatment giant hairs should be removed by means of forceps, but it is essential that no force be used. When the little nodules have formed, the overlying surface should be sterilized and an incision made with a sharp tenotomy knife. A portion of hair will present, and can easily be extracted.—*Medical News.*

A Canadian View of Russia—The *Canadian Medical Record* regrets that the next International Medical Congress will be held in Russia, "as we fear very few will trust their lives in that barbarous country," and thinks that "Vienna or even Montreal would be a much more acceptable and more accessible place." Montreal might be more accessible to the inhabitants of the North American Continent, but we assure our esteemed contemporary that Russia is not such a dreadful place. Many of its inhabitants go clothed and eat with forks, and the nihilists seldom kill more than sixteen visiting doctors in a week.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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TOTAL EXTIRPATION OF THE UTERUS IN DISEASE OF THE ADNEXA.

THE importance which this subject has assumed of late is shown by the prominence assigned to it in Society discussions, notably that held before the American Gynecological Society at its recent meeting. The general practitioner who is not familiar with the rapid advances in gynecological surgery is apt to be somewhat appalled by the confident assertion that the uterus should be extirpated in all cases in which the adnexa are removed, on the ground that the organ itself, being diseased at the same time, is not only useless, but remains as a constant source of discomfort, and even of danger, to the patient. This, in a word, represents the dictum of the most advanced school, which as yet has but few followers among us. A further argument, which appeals strongly to abdominal surgeons, is that by removal of the uterus in cases of extensive suppurative disease of the adnexa, perfect drainage is secured per vaginam—the method which is now recognized as the ideal one—as was foreshadowed by Sims a quarter of a century ago. To this the more conservative reply that securing vaginal drainage by hysterectomy is too heroic a procedure, since the same result can be obtained by retaining the uterus and draining through Douglas's pouch.

As is usually the case when a novel and radical surgical operation is first advocated, the adherents of hysterectomy and its opponents see only their side of the question. Reading the enthusiastic statements of the former, the occasional operator would infer that nothing was easier and safer than the extirpation of the uterus after removal of the diseased adnexa—in fact, that it was comparable with a simple ovariotomy. But it must be remembered that the few surgeons who report such remarkably favorable statistics are unusually skilful operators, who have acquired their special aptitude by a wide experience in hystero-myomectomy. An operation which is easy for them is formidable to one of limited experience in this work. Therein lies the danger to the rank and file of cœliotomists, whose name is legion.

The technique of the operation is the main difficulty in the way of the unqualified acceptance of the proposition that a uterus without its tubes and ovaries, and especially a diseased uterus, becomes a useless appendage, and should therefore be extirpated. No reasonable gynecologist can deny that the uterus is frequently a source of trouble, that it may be the cause of persistent pain and hemorrhages, and be open to repeated infection (gonorrhœal or septic) months, and even years, after the removal of the diseased adnexa. Hence, even the most conservative acknowledge that there are cases in which it must be admitted that it would have been better if the organ had been removed at the time of the operation. But is hysterectomy under these conditions to be recommended to the profession at large? To this we reply unhesitatingly in the negative. Given a case of double pyosalpinx with firm intra-pelvic and intestinal adhesions in which considerable manipulation has been necessary, we affirm that many patients are not in a condition to bear the extra amount of shock involved in removal of the uterus. In spite of the advantages afforded by Trendelenburg's posture, there are few surgeons who can complete the additional operation in "twenty minutes," as is claimed by its advocates. So far as our observation goes, twice that time is required. We have yet to see a case in which a difficult salpingo-oöphorectomy was supplemented by extirpating the uterus, when the shock was not most marked, and the convalescence, when recovery followed, protracted.

This point was emphasized by Dr. Coe in reporting a recent case to the New York Obstetrical Society, and was dwelt upon by Dr. Bache Emmet in the discussion before alluded to. The latter gentleman also raised the pertinent question whether a patient in private practice would consent to such a radical mutilating operation for disease of the adnexa, if she were consulted beforehand. To perform such an operation without her full knowledge and co-operation would be assuming a responsibility which few would care to take, even in this radical age. We doubt if the average woman would be sufficiently influenced by the arguments which appeal so strongly to the abdominal surgeon, as to take the additional risks involved in total extirpation.

THE STATUS OF CHRISTIAN SCIENCE IN NEBRASKA.

A CHRISTIAN scientist in Nebraska was recently tried before the District Court of Gage County, Neb., on the charge of practising medicine contrary to the statutes of that State. He was acquitted by the jury, but the prosecuting attorney carried his exceptions to the Supreme Court, where they were sustained. Judge Ryan handed down a decision in which he said that the fact to establish a State Board of Health, to regulate the practice of medicine in Nebraska, is as much directed against any unauthorized person who shall profess to treat any physical or mental ailment of another, as against one who practises medicine as the term is generally understood.

The section of the act upon which this decision was based reads as follows: "Any person shall be regarded as practising medicine, within the meaning of this act, who shall operate on, profess to heal, or prescribe for, or otherwise treat any physical or mental ailment of another. But nothing in this act shall be construed to prohibit gratuitous services in case of an emergency, and this act shall not apply to commissioned surgeons in the United States army and navy, nor to nurses in their legitimate occupations, nor to the administration of ordinary household remedies."

This law is certainly rigid, but not too much so, and

any suffering that might arise from a too strict application of it is prevented by the emergency clause. It would be impossible for a layman to be punished for saving life in the absence of a physician, as has actually occurred in France.

THE EYE AND SURGICAL TREATMENT OF EPILEPSY.

There has been beyond any doubt a factitious prominence given to the treatment of epilepsy and other nervous disorders by surgical treatment of the eye muscles. It is the general opinion of neurologists that there is little or nothing to be gained by it, while, on the other hand, much harm may be done.

Dr. Casey A. Wood, of Chicago, has recently (*New York Medical Journal*) gone over the subject very thoroughly, and has called attention to the numerous cases of epilepsy on record which have been cured by minor surgical operations of various kinds. His conclusions are worth presenting here: He says.

"1. Heterophoria in some form, latent or manifest, can be shown to exist as an ocular condition in fully ninety-five per cent. of all individuals.

"2. Alone and when associated with ametropia it is not an uncommon cause of so-called asthenopia.

"3. In the latter case the correction of the accompanying refractive error in the large majority of cases relieves all the symptoms set up, both by the ametropia and muscular anomaly; when it does not, the heterophoria may be said to be responsible for the asthenopia.

"4. It is highly probable that when epilepsy is in part or wholly the result of eye-strain other evidence of the latter is present.

"5. It must follow from the foregoing that in the eye treatment of epilepsy of any decided degree the correction of the ametropia, and not the correction of the heterophoria, is the first and most urgent duty of the ophthalmologist, and that in cases where both are corrected at the same time it is fair to suppose that the results, if any, are due to the ametropic correction.

"6. In cases of epilepsy with heterophoria and emmetropia, or where the correction of refractive errors has failed to relieve the asthenopic symptoms and the production of orthophoria is followed by cure of the epilepsy and the asthenopia, it is just to say that the operation on the eye muscles or treatment of them has produced the effect of stopping the convulsions.

"7. In the absence of ocular symptoms, apart from the epilepsy, an operation upon the eye muscles stands in the same therapeutic relation to a cure or relief of the disease as do other surgical procedures that have during the past century been in vogue, such as tracheotomy, setons, ligature of the vertebral arteries, trephining, oöphorectomy, circumcision, castration, the actual cautery, the resection of stray scars, and so on.

"8. These operations bring about a cure or relief of the epilepsy (both idiopathic and hystero-epilepsy) by their powerful mental effect upon the patient—a truth long recognized by neurologists.

"9. Genuine cures of epilepsy by eye treatment of any kind must necessarily be confined to those cases where a faulty ocular apparatus acts as a peripheral irritant. It remains yet to be shown that anomalies of the extrinsic muscular portion of that apparatus are to any large extent responsible for the seizures of epilepsy.

"10. The eye treatment of epileptics who present signs of ocular distress has not received that attention which the importance of eye-strain in the category of reflex irritants seems to call for. The eyes should be carefully examined in every case of epilepsy where asthenopic symptoms are present or are suspected.

"11. I question the wisdom of encouraging the profession, and through them the laity, to believe that every case of idiopathic epilepsy is a suitable one for eye treatment, but prefer to say that only those cases are fit subjects, in the proper scientific sense, for eye treatment whose visual organs are palpably the source of irritation, giving rise to symptoms generally included under the term eye-strain.

"12. That when all remedies fail, some such operation as Reynolds suggests—easy to perform, perfectly safe, and yet of a severity and character tending to make a lasting impression on the patient's mind—is indicated. I would suggest the removal, at intervals, of small pieces of skin from various parts of the body, the denuded spots being allowed to heal by granulation."

APPARENT DEATH BY ELECTRICITY.

At a recent meeting of the Biological Society of Paris, Dr. d'Arsonval reported the case of a workman who was caught between two cables conveying electricity from the station of La Chapelle to that of Epinay-sur-Seine. The current measured 5,000 volts, and the man received the full discharge for a period of five minutes which elapsed before the current was shut off. It was not known at first what caused the disturbances noted in the current, and the man was not discovered until forty minutes later. He was then apparently dead, but attempts were made to resuscitate him by artificial respiration after Sylvester's method. These failing, resort was had to rhythmical tractions of the tongue. Respiration was in this way gradually re established and the man made a quick recovery, being none the worse for his experience except that he suffered from the burns. The reporter believed that death from electricity is not immediate, but follows asphyxia and syncope, conditions which may often be removed by treatment. If this is so, may the criminals executed in this State be said to be killed by electricity or during the autopsy?

Reformatories and Jails.—An exchange says that there are 1,758 county jails and but 44 juvenile reformatories in the United States. In Great Britain there are over 400 reformatories and industrial schools for juvenile delinquents, and the number of prisons has been reduced from 113 to 57 within the past ten years.

The Oldest Man in the World.—A Frenchman now living in Russia is said to have attained the immense age of one hundred and twenty six years. From a very interesting account of his life, just published in a Russian journal, it appears that he was born in Paris on April 17, 1768. He has a vivid recollection of the "Terror." He joined Napoleon's army in 1798. He fought in the battles of Austerlitz and Jena, shared in the campaigns of Egypt and Spain, and finally was one of the four hundred thousand men who followed Napoleon to Moscow.

News of the Week.

The Cholera Epidemic in Europe shows no signs of abating as yet. The disease is raging in many provinces of Russia and in Galicia, and lurks obstinately along the shores of certain streams in France, Belgium, and Holland. In St. Petersburg there were 313 new cases and 240 deaths reported for the week ending August 4th, and in the city and province of Warsaw during the week previous the new cases numbered 553 and the deaths 296. In sixteen infected districts in Galicia there were 126 new cases and 83 deaths on August 5th and 6th. In many towns in this province all industry and commerce are at a complete standstill; the rich have fled and the poor are left in a starving condition. In Holland the disease is present in Amsterdam, Haarlem, Halfweg, Dordrecht, and Maastricht, 26 new cases and 13 deaths having been reported in these places on August 1st. Deaths from cholera have also taken place in Dantzic and other towns in Eastern Prussia. The North German Lloyd and Hamburg American Steamship Companies are about to erect buildings at Illowo and other places on the Russo German frontier for the detention and examination of intending steerage passengers to this country. The stations will contain disinfecting apparatus for baggage and clothing, and bathing-places for the emigrants.

Openings for the Unemployed. — The war between Japan and China promises to be a protracted one, and it is probable that the services of foreign surgeons will be in demaud in the Japanese army and navy, if not in the Chinese also. Yet we would not advise young surgeons to go to the expense of a trip to Japan without having some definite assurance that their services will be wanted. And furthermore, a law was passed in 1860 making it a penal offence for citizens of the United States to take part in a war against a friendly nation. That probably, however, would not apply to the case of non-combatants such as surgeons and nurses.

The Plague is still epidemic in Canton in virulent form, the mortality being ninety per cent. of those attacked. For the three months ending July 1st it is estimated that forty thousand deaths have occurred. Cholera has also made its appearance there in epidemic form.

The British Medical Association.—A number of Americans were announced to be present at the meeting of the British Medical Association in Bristol last week. Among them were Drs. J. J. Chisholm, G. M. Gould, J. L. Thompson, G. T. Stevens, Henry D. Chapin, W. P. Northrup, and Dillon Brown. Dr. Northrup, in addition to several communications of his own, read a paper on intubation for Dr. Joseph O'Dwyer, who was unable to accept the invitation to be present in person.

The French Society of Dermatology and Syphilography held its fifth annual meeting at Lyons on August 2d and two following days.

Dr. William J. Little, of London, "the father of English Orthopedy," died on Saturday, July 7th, in the eighty-fourth year of his age. He was for many years physician to the London Hospital and lecturer on the Practice of Medicine in the college. His first work, "A Treatise on Club foot and Analogous Distortions," was published in 1839, and his last, on "In-Knee," written jointly with his son, Mr. E. Muirhead Little, in 1882. Soon after that he retired from practice to pass the remainder of his days at his country residence.

Dr. Judson B. Andrews, Superintendent of the Buffalo State Hospital for the Insane, died in Buffalo, August 3d, aged sixty years. He was a graduate of Yale College in the class of 1855, and received his medical degree in 1863. During the War of the Rebellion he served as a captain in the Seventy-seventh New York Infantry, which was organized at Saratoga, but resigned July 16, 1862. He is also credited with service as a surgeon in a Connecticut regiment, but his name does not appear in the New England roster of volunteer officers. He was ex-President of the Erie County Medical Society, a founder and ex-President of the New York State Medical Association, as well as ex President of the Psychological Section of the Ninth International Medical Congress. In 1892 he was elected President of the American Medico-Psychological Association. His many years' service as Assistant Superintendent of the Utica Asylum, as Superintendent of the Buffalo Asylum since it was opened in 1880, and as the working editor of the *American Journal of Insanity*, well qualified him as an expert in his chosen department, to which, indeed, he contributed many enlightened reforms.

The First French Congress of Internal Medicine will be held in Lyons, under the presidency of Professor Gailleton, mayor of the city, during the week beginning on Thursday, October 25th. Medical men of any nationality may take part in the proceedings on payment of a subscription of twenty francs, but all communications must be in the French language.

The Medical Publishers' Association meets at Hot Springs, Va., August 13th and 14th.

The American Journal of Insanity will hereafter be published in Chicago, under the managing editorship of Dr. Richard Dewey. The Journal has become the organ of the American Medico-Psychological Association, but its general form and scope will remain unchanged.

Insanity and Crime.—At the meeting of the British Medical Association, just held at Bristol, a discussion on "The Law in Relation to the Criminal Responsibility of the Insane" took place before the Section on Psychology. It was opened by Dr. L. A. Weatherly, who advocated a change in the English law on this subject. At present the law is that if the accused was conscious that the act was one which he ought not to do, and if the act was contrary to law, he is punishable. Dr. Weatherly maintained that if it is proved that the accused is certifiably insane, and further, that the crime charged is the outcome of his mental disease, he is entitled to a verdict of insanity and should be placed under treatment in an asylum for the insane and not be punished as a criminal.

The Sabathu Leper Asylum.—The annual report of this asylum for 1893 has been received. The superintendent acknowledges with gratitude a ready response to his appeal for increased donations, but says that the need for help is still urgent. Several contributions were received from friends in the United States. For the benefit of those interested in the study of leprosy some excellent photographs have been taken of a group of

the leper inmates, and are sold for the benefit of the asylum at one dollar per copy, including postage, and a short history of each person. The address of the superintendent is Dr. M. B. Carleton, Sabathu, North India.

Pregnancy at an Advanced Age.—In the Berlin *Intelligenzblatt* of July 5th, among the death notices was one of Frau Marchoun, sixty-eight years of age, the cause of whose death was said to be puerperal fever.

A Monument to Volkmann.—At the recent bicentenary celebration of the University of Halle, a monument to Professor Richard v. Volkmann was unveiled with appropriate ceremonies.

A Medical Monk. — Dom Sauton, a Benedictine monk, and a doctor of medicine as well, who recently returned to Paris from a mission, both religious and scientific, to the lepers of the Scandinavian Peninsula, has started again on an extended tour among the lepers of Asia Minor and Greece, and will visit Japan and the Sandwich Islands before returning to France.

Dr. Charles S. Briggs succeeds his father, the late Dr. W. T. Briggs, as Professor of Surgery in the University of Nashville.

The St. Louis "Clinique."—Dr. Emory Lanphear has assumed the editorial management of the above-named journal.

Sterilization of Doctors.—It has been proposed by Gutmann that stations be erected in convenient localities in cities and large towns where physicians may go to be thoroughly disinfected immediately after they have visited a case of infectious disease, and before paying any further visits. The operation will take about fifteen minutes, and then the doctor may go about his business, proud in the consciousness of being clean and no longer a menace to the health of his fellows.

The Iowa Public Hall Association, whose aim, as announced in the notice of meeting, is purely philanthropic, will hold its fourth annual session in Des Moines, September 6 and 7, 1894. Membership in the Association is not limited to medical men, but all interested in the prevention of sickness are eligible.

The American Electro-Therapeutic Association will hold its fourth annual meeting at the Academy of Medicine, in this city, on September 25, 26, and 27, 1894. An interesting programme is announced. The President of the Association is Dr. W. J. Herdman, of Ann Arbor, and the Secretary, Dr. Margaret A. Cleaves, of New York.

Diphtheria Germs in Cheese.—The Board of Health in this city recently received a telegram from the Secretary of the State Board of Health, stating that some cheese which had been shipped to a firm of provision-dealers contained Loeffler's diphtheria bacilli, and requesting that samples be submitted to the bacteriologist of the Department for examination. This was done, with the result of proving that the suspicions of the State Board were well founded. The shipment consisted of three thousand pounds, and the entire lot has been seized and destroyed. There was diphtheria in the family of the farmer from whom the milk was obtained. The tests thus far made have been culture-tests, but inoculation experiments are to be made on guinea pigs.

Mr. Gladstone's Eyes are now reported to be so much improved that he is able to dispense with goggles.

Thyroid Extract has lately been recommended in the treatment of obesity. But it is well to remember that this is a dangerous substance, often causing great weakness of the heart, and it should be used with caution.

An International Congress for the Protection of Infancy will be held in Bordeaux, commencing July 22, 1895. The work of the Congress will be divided into three sections: 1, Physical protection, in which questions of day nurseries, infant and foundling asylums, etc., will be discussed; 2, moral protection, in which will be considered orphan asylums, country homes, the rescuing of abandoned children, etc., and 3, administrative protection, in which the various laws, existent and proposed, relating to the care of young children will be discussed.

Dr. Hans Buchner has been appointed Professor of Hygiene and Director of the Hygienic Institute in Munich, to succeed Professor von Pettenkofer.

A Royal Doctor.—*The Lancet*, with inconceivable temerity, makes the awful suggestion that the infant son of the Duke of York be educated as a physician or surgeon. It might not be a bad thing for the young man to be provided with a livelihood in case anything should happen to interfere with the exercise of his hereditary profession. Edward Albert Christian George Andrew Patrick David Wettin, M.D. Lond., F.R.C.P. Edin., F.R.C.S.I., Defender of the Faith, etc., etc., would be quite imposing.

The American Public Health Association will hold its twenty-second annual meeting in Montreal, on September 25–28, 1894.

Students in Leipsic.—The University of Leipsic is disturbed by the gradual decline in the number of its students. Twenty years ago it stood at the head of German universities, while to day it has a thousand less than Munich, and twice that number less than Berlin. Those that remain are studiously inclined, however, for they recently held a meeting in which a resolution was passed to abstain from beer drinking in the forenoon, on the ground that early beer interfered with honest work.

The Earning Value of an Eye Mathematically Appraised.—The earning value of an eye depends on various conditions; it is evidently greater if the remaining eye has poor sight than if the remaining eye has good sight; for in the first case its loss would practically be equal to the loss of both eyes. Professor Zehander has furnished us with a formula by which the earning capacity of the remaining eye (and consequently the earning value of the lost eye) can be appraised for the manifold conditions of sight. The normal sight of an eye being valued at 100, the earning capacity of the remaining eye is $\frac{2+10}{3}\frac{0+0}{0} = 66\frac{2}{3}$ per cent., hence the loss of one eye amounts to $33\frac{1}{3}$ per cent. of the former earning capacity, provided both eyes had full vision. But suppose the vision of the remaining eye is only four-fifths, its earning capacity would be $\frac{2+8}{3}\frac{0+0}{0} = 53\frac{1}{3}$; hence the lost eye would have an earning value of $46\frac{2}{3}$ per cent., and thus the loss in earning capacity can be estimated under all conditions if in the above formula the degree of vision of the remaining eye is substituted for 100.—*Journal of the American Medical Association.*

Society Reports.

Congress of American Physicians and Surgeons.

Third Triennial Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twentieth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from page 90.)

THIRD DAY, FRIDAY, JUNE 1ST.

The Treatment of Convalescence and the After-care of the Insane.—DR. HENRY R STEDMAN, of Boston, considered the dangers attending convalescence in insanity and the precautions necessary to prevent relapse or prolong remissions. General rules and advice regarding the prevention of insanity are not regarded even by predisposed subjects, and are practically of but little use. The case is different when once an attack of insanity has been experienced. Although in certain cases the proper conduct of convalescence is vital to mental health, the study of this period is confined to a few scattered suggestions in the works on insanity. Instances of abrupt recovery, with almost no convalescent stage, are rare. Although it may happen in chronic cases, it occurs, as a rule, in those of short duration—notably confusional insanity and the toxic and neurotic insanities.

Lucid intervals or spurious convalescences differ often in no respect from genuine recovery, with the single and essential exception that the sleep does not improve or is worse. This is a valuable indication in the prognosis of permanent return to reason.

To the cardinal signs of convalescence should often be added the disappearance of decided fear of a return of the attack and dread of the stigma to follow. It is important to be informed regarding normal and usual physical troubles of the patient, as their reappearance is another and valuable indication of recovery; so, also, a knowledge of the sequence of immediate prodromata of an attack. They are often repeated in reverse order while the patient is getting well.

Complete mental rest during menstrual epochs, so highly important at this time, is often disregarded, and application of the mind, even to a slight degree, in study or other work, is equally to be deprecated.

Early discharge from the asylum, or from special care away from home, is to be advised against, as a rule, especially in cases of melancholia with a history of suicidal attempts and after acute mania, the most exhausting form of insanity, and one which leaves the patient particularly susceptible to slight influences for a long time.

On the other hand, we should frequently advise early removal in other cases convalescing from melancholia, particularly when homesickness is a marked feature and occasionally when there is refusal of food. Certain cases of mild mania, also paranoiacs who are independent in the asylum and actively oppose treatment, are steadied by outside life. A change also works well until its novelty has worn off.

The first year or so after recovery is a very critical time. The reader gave a number of indications in special cases and suggestions for prevention of relapse.

The above remarks applied chiefly to well-to do patients. An important branch of this subject is the means for the after-care of the pauper insane. There is practically no provision outside of asylums for this class, and practically little advice or other help is given these unfortunates on leaving asylums. While for the physically sick, on the other hand, there is abundant provision for their care during convalescence, and the discharged convict is greatly helped and encouraged by charitable societies for the purpose. Asylum physicians often hesitate to set certain patients at liberty whose mental condition seems to have so far improved as to make it useless to keep this class longer under care (and even some who have fully recovered), for fear that, thus suddenly thrown on their own resources, without oversight, or perhaps means of support, they will fall back into their old habits of life which gave rise to their insanity. This fact, and their delicate mental condition, often render them easy victims to designing people.

These and other reasons have led to the formation, in France, of protective societies, called "Societies of Patronage" under official auspices. Their duties are to aid convalescent or recovered pauper patients by gifts of money, clothing and tools, redemption of articles in pawn, payment of rent, admission to convalescent homes in cottages intermediate between confinement and complete freedom, or in hospitals or house of refuge, securing situations for them, and finally their supervision wherever employed. This work continues during the first month or two after the patient's discharge. Similar societies or means of relief have been adopted in England and Scotland. They were described in detail. There is no better work on the score of both humanity and public economy than the adoption in this country of similar means for the prevention of insanity.

DR. E. D. FISHER was of the opinion that patients left the asylum too early. In cases where they are oversensitive regarding their previous incarceration, something must be done to care for them and obviate a relapse. He was in favor of establishing convalescent homes for such patients, and spoke at length in confirmation of the views of the author of the paper.

DR. DERCUM thought this matter a very important phase in the care of the insane. It is, however, quite difficult to deal with individual cases. Where the element of exhaustion was a prominent causative factor, the patient required detention and care much longer.

DR. STARR was glad to know that Dr. Stedman favored the earlier removal from asylums of melancholics. One of the chief difficulties was in controlling the family, who did not know how to manage the patient after his return.

DR. JONES, of Minnesota, said that in Minnesota, since the word asylum had been changed to that of hospital, it had tended to remove any of the supposed stigma that has been usually attached to people who have been in institutions for the insane.

DR. KNAPP and the President concurred in the views expressed by the reader of the paper.

DR. DANA said that the subject was of great economic as well as medical importance; he would suggest that a committee be appointed to investigate the matter.

This suggestion was then presented in the form of a motion, which was carried. The President then appointed as a committee Drs. Stedman, Dana, and Dercum.

Exhibition of a Suicide's Brain with Two Pistol ball Wounds.—DR. BURT G. WILDER, of Ithaca, exhibited a specimen and showed a dozen photographs of various aspects and blackboard diagrams of the left side and of a transsection at the level of the fatal wound.

W. I. B., dentist, thirty-five years of age, of Ithaca, N. Y., on April 7, 1894, was found in his office, dead, a $\frac{32}{100}$ revolver clasped in his right hand. There were two bullet-holes—one in the middle of the forehead, the other in the right temple, neither ball having emerged. In accordance with his written directions, the brain was preserved in the museum of Cornell University as specimen 3,129.

The first ball, presumably deflected by the skull, passed caudo-ventrad to the cranial floor and was reflected dorso-caudad at nearly the same angle to a point just cephalad of the precommissure, where it lodged, having merely abraded the mesal surface of the left frontal lobe. The second ball entered at the right sub frontal gyre, passed obliquely sinistro-caudo dorsad, tore the callosum and intervening structures, and emerged in the second left central fissure. Since there was no suspicion of foul play, and documents in the deceased's handwriting declared

his intention to commit suicide, the case exemplifies the possibility of two self inflicted bullet-wounds of one brain.

The fissures present many peculiarities. The most perplexing is the apparent coexistence of two central fissures on each side. The only two such cases hitherto observed were recorded by Giacomini and Calori. Suicide had been committed by a grandfather and one uncle and attempted by another uncle.

Dr. Dercum had examined a large number of brains of the insane, but he had never seen such an instance as that presented by Dr. Wilder.

Dr. Dana said that he had no doubt that the anterior of the two fissures was the fissure of Rolando. The interruption of this fissure on one side by a bridging convolution was extremely rare and very interesting. The brain presented a unique fissuration. He could not understand how a primary fissure like the Rolandic could be doubled in any event, and was skeptical of the genuineness of reported cases.

Infantile Hemiplegia, Imbecility, and Epilepsy; Craniotomy; Marked Improvement.—Dr. Edw. B. Angell, of Rochester, reported a case and read a paper with the above title. The salient features of the case were forceps delivery, succeeded by double ptosis, occasional tonic spasm of right arm, contracture, and hemipalsy of right hand. Physical and mental development were slow, and epilepsy, with three to five seizures daily, supervened three months prior to the operation. At time of examination the child was partly imbecile. Skull measurement gave a cranial index of 77; palate was high-arched, teeth jagged, and right wrist and hand, much smaller than left, were helpless.

A diagnosis was made of pressure in neighborhood of the hand-centre of left motor area, due either to a hemorrhagic plaque or cyst. Craniotomy was decided upon, as a tentative measure, with a view of relieving pressure and consequent symptoms, while avoiding the greater risk of opening the dura necessary to removal of the cyst-wall. The operation was performed March 13th last, and, upon removal of the trephine button, a sub-dural hemorrhagic cyst was found. The cranium overlying the cyst had become very much thinned, and was freely cut away beyond the limits of the cyst. By an aspirating needle a half drachm of fluid was removed; otherwise the dura was not injured. The scalp incision healed readily; but, through an overtight bandage, œdema developed, and by the eighth day caused sufficient pressure to develop a hard convulsion and high temperature. With the remedying of this, marked improvement in all the symptoms ensued.

At the present time (three months after the operation) there has been no recurrence of the epileptic attacks, while there has been a commensurate improvement in the mental and moral condition.

Dr. Mills considered it presumable that the cyst which was not opened was a porencephalic cavity, and that opening and draining it would have been useless.

Dr. Putnam agreed with Dr. Mills. He said it was rarely possible to remove a cyst satisfactorily. In a case seen by him the cyst was tapped and the drain left in. Improvement followed.

Dr. W. A. Hammond spoke of two cases on whom craniotomy was performed. One was eighteen years of age, and became an imbecile as a result of an injury to the head. He remained in this condition four years. After operation there was improvement at the end of two months. At the end of a year the improvement was marked. In the other case, of a similar character, the operation was followed by improvement.

The President said cysts differed in character. The superficial cysts were due to meningeal hemorrhage during labor, and could be satisfactorily treated by operation.

Dr. Angell, in closing the discussion, said this was not a case of porencephalus, but an arachnoid cyst from a meningeal hemorrhage.

Infantile Amyotrophic Lateral Sclerosis of the Family Type.—Dr. Charles Henry Brown, of New York, gave the history and report of a case of this kind. The disease occurred in a boy fifteen years of age. There was marked emaciation, particularly in the upper part of the body, and paralysis and atrophy of all the facial muscles, excepting those of mastication. Fibrillary twitchings were present all over the body. The superficial and deep reflexes were active. Ankle clonus was demonstrable. There was double lateral curvature of the spine. Mentally the boy was fairly bright. He cries readily and is amused at trifles. Is microcephalic, and acts and appears like a child of ten. There are evidences of a general arrest of development. Dr. Brown considers his case as belonging to one of the family types of infantile progressive bulbar paralysis, plus the same implication that is found engrafted upon the progressive poliomyelitis of adults, and which gives us amyotrophic lateral sclerosis. In muscular myopathies the respiration is not involved. The upper facial muscles are usually unaffected, and the "taper mouth" is not observed. The atrophy is more irregular, more bilateral; that is, it is worse on one side. Electric reactions are not of especial importance in diagnosis. In some reported cases of infantile progressive bulbar paralysis they are normal; in others, degenerative.

To place this case among the scapulo-humeral or facio-scapulo humeral types of muscular atrophy is out of the question. Though the neck is much thinned, the scapulo humeral group and the back muscles are generally the best the patient has. What muscles he does possess are active, and the exaggeration of reflexes, the fibrillary twitchings, and the retractions of tendons that are present, though slight, preclude a peripheral origin of the disease. As far as is known, no case of the kind has ever been reported and diagnosticated as infantile amyotrophic lateral sclerosis of the family type. Hoffman's case, a boy aged eleven years, closely resembles it. Here, too, there was marked labio-glosso laryngeal paralysis, great emaciation of upper extremities of the trunk, extending down below the hips, together with exaggerated reflexes in the lower extremities and diminished reflexes in the upper. In Hoffman's case the atrophy was probably too extreme in the upper extremities to admit of much response. In all the cases reported of these bulbar diseases belonging to groups of family types there has been marked difficulty of respiration and special implication of the upper branch of the trifacial nerve.

Dr. Knapp showed a microscopic specimen from a case of amyotrophic lateral sclerosis which occurred in a man aged fifty years. The disease progressed very rapidly. He died at the end of fourteen months of broncho-pneumonia. There were no bulbar symptoms. The section presented showed marked vascularity in the sclerosed portions of the cord.

Dr. Putnam reported an analogous case of bulbar paralysis in a young child.

Dr. Preston, of Baltimore, had seen a child two years of age in whom spastic symptoms, such as exaggerated knee-jerk and ankle clonus, developed soon after an attack of acute poliomyelitis.

Ingravescent Cerebral Hemorrhage Treated by Ligation of the Common Carotid Artery.—Drs. F. X. Dercum and W. W. Keen, of Philadelphia, presented a joint paper with this title, reporting two cases. In the first case the symptoms pointed to a slowly progressive capsular hemorrhage, extending over three days before ligation of the common carotid was resorted to. The symptoms were steadily progressive and threatened a fatal termination. Ligation of the carotid, as proposed by Mr. Horsely, promptly arrested the symptoms, and the man made an excellent recovery. Months afterward merely symptoms of a spastic hemiplegia persisted, but they were not very marked.

The second case was one in which the symptoms pointed to a progressive hemorrhage occupying eight hours. The patient's condition was so grave at the time of the operation that little was hoped from it; and indeed it proved useless, patient dying several hours afterward.

Dr. Dercum pointed out that the class of cases in which benefit is to be hoped for from ligation of the common carotid are those in which the hemorrhage is decidedly ingravescent in type. He also dwelt upon the difficulties of a differential diagnosis between hemorrhage and thrombosis in such cases, and pointed out that even in case of an error in diagnosis it could not be said that the operation involved additional risk to the brain. Finally, he suggested that, instead of ligation of the vessel, the expedient of compression of the common carotid should be tried in every case of apoplexy as soon as the physician arrived. A surgeon is not always at hand, and besides compression of the carotid is so simple a procedure that a bystander can easily be instructed to apply it.

Dr. Frank Fry, of St. Louis, knew of several instances in which the operation had been done. All proved fatal. He believed that none of them were indicated or justifiable.

Dr. Knapp believed that the neurologist does not see the case until it is too late to make a satisfactory diagnosis.

The President thought the chief difficulty was in diagnosis, and that the hemorrhage was usually a self-limited one.

Dr. Dercum, in closing the discussion, said the operation was only indicated where the diagnosis of ingravescent apoplexy was definite.

Merycism.—Dr. W. A. Hammond, of Washington, defined this condition as the functions of rumination and remastication in the human subject. Only about fifty cases have been reported. Several cases were referred to, among them that of the distinguished physiologist, Brown Séquard, who had acquired it as a result of experiments performed upon himself. The case reported was that of a young man, whose mental condition was impaired and who was also the subject of merycism. No special treatment was undertaken against the merycism, but the patient was trephined with the purpose of improving his mental condition. There were no unusual features connected with the operation; but it was noticed that regurgitation did not occur with the meals he subsequently ate till on the fifth day, when there was a slight return. Eight days later a similar button was removed from the corresponding part of the left side of the skull. From that time (about six months ago) till the present there has been no regurgitation.

Whether the cure of the merycism in this case was directly due to the operations on the cranium or the result of the mental improvement is a question which it would be difficult to answer.

Dr. Knapp was unaware that so few cases had been reported in this country. Two cases had come under his notice. Both were physicians in good mental condition. He thought a distinction should be made between congenital and acquired merycism.

Dr. Lloyd believed that some cases should be considered as a neurosis allied to hysterical vomiting, such as regurgitation from the œsophagus.

The President had seen a man who had conquered the habit by the exercise of his own will. His views were in accord with those expressed by Dr. Lloyd.

Dr. Hammond said that acquired merycism was always due to overloading the œsophagus and to the bad habit of rapid eating. He thought it extremely doubtful as to its being a neurosis.

Chronic Chorea.—Dr. Lloyd, of Philadelphia, exhibited a large number of sections from the mid-brain, pons, medulla, and spinal cord of a case of chronic chorea.

Election of Members.—The following named gentlemen were elected to active membership: Dr. Ira Van Gieson, of New York; Dr. E. B. Lane, of Dorchester, Mass.; and Dr E. D. Bondurant, of Tuscaloosa, Ala.

Election of Officers.—The officers elected for the ensuing year were: *President*, Dr. Philip Coombes Knapp, of Boston; *Vice-Presidents*, Dr. F. X Dercum, of Philadelphia, and Dr. W. A. Jones, of Minneapolis; *Secretary and Treasurer*, Dr. G. M. Hammond, of New York.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Eleventh Annual Meeting, held in Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from page 124.)

Fourth Day, Friday, June 1st.

Rarity of Phthisis in the Highlands of Pennsylvania and New York.—Dr. Guy Hinsdale, of Philadelphia, read a paper with this title: He said that, if a physician were asked to name a district most free from phthisis in New England or the State of New York, he probably would name the Adirondacks. He wished to draw attention to a near-by region in Pennsylvania and New York, measuring 12,000 square miles, where the death rate from phthisis was as low as 1 in 1,091 persons living. He proceeded to describe the tier of counties plotted on a map, and said that as the maritime tier of counties was approached in New York there is an increasing death-rate. The region in Pennsylvania and New York under discussion had a population of sixty-two per square mile. It was largely an agricultural section. He claimed for it elevation and an equable temperature. The mountains were covered with vast areas of hemlock.

During May, June, July, August, and September, it offered an excellent climate. November to April, it was solid old-time winter weather. The area generally was broad, high table-land. Pneumonia and pleurisy are uncommon. The mountain-tops are above fog and moisture. In McKane County in 1880 there were 1,330 living to each death from phthisis.

The paper was discussed by a number who knew the region well and endorsed the statements of the speaker.

Meteorological Data of Colorado.—Dr. Samuel A. Fisk, of Denver, Colo., read a paper on this subject.

He dwelt on the known advantages of Denver. Its high elevation, a mile above sea-level, its dryness, etc. He classed Denver among the cool climates. The winds were from the south—dry winds. It is not the windy locality that many fancy. The climate is mild and there is less wind than in Philadelphia and New York. Colorado is peculiarly suited for life out of doors, due to pure air and sunshine.

The dust-storms in Colorado were made too much of by outsiders. In fact the dust did no harm, a fact too well known to admit of argument. He deemed the damp air of the East more harmful in lung cases than dust in the West.

Mr. Mark W. Harrington, of Washington, wished to supplement what had been said. He spoke of sunshine and wind, saying that the latter is a variable quantity. The velocity of the wind increases as we ascend. At the level of the street it is one thing, another half way up a high building, and still another on its top, as proven by the anemometer.

Dr. Fisk closed the discussion. He said the soil was dry and porous in Colorado. There was dust. Solar radiation made the atmosphere very dry. Patients from the East should be sent to a doctor in Colorado who knew the climate. He would advise on the proper locality.

Sensible Temperatures.—Mr. Mark W. Harrington, chief of the Weather Bureau, Washington, read a paper with this title. The term "sensible temperature" was one of his coining. It was the temperature felt by the skin, that which is felt at the surface of the skin, as on the back of the hand. On a sensible temperature depends our sense of comfort in hot weather. High shade temperatures do not necessarily mean discomfort, if the dew point is low. In may be 127° F. in the shade, but the temperature felt by the skin may be 45° below that, owing to the temperature at dew point. On a chart he showed the shade temperatures and dew points. Where the shade temperature and dew point intersected, it indicated the real or sensible temperature, being that felt by the individual.

By way of contrast, he made a comparison at 110° F.

and 115° in the far West, where such a high temperature may be less trying than 80° or 90° at the seaboard. The sensible temperature of El Paso, Tex., is similar to that of Erie, Pa.

There are localities in the United States where the thermometer may run up to 120° to 140° F. in the summer. The direct rays of the sun seem to exert a special stimulus on organic structures. The color of clothing is of less consequence than its looseness.

Dr. Guy Hinsdale dwelt on the value of the paper; it had unfolded a new and very instructive way of looking at the weather maps. In future, in consulting a weather map, we should make the correction, *i.e.*, the difference between shade temperature and dew point, to obtain the sensible temperature. All know of the necessity of making barometric corrections for reliable readings; the same now will be necessary for thermometric.

Dr. Robert H. Babcock, of Chicago, said the matter had a practical and important bearing on the clothing of our patients. Patients should wear woollen underwear all through the summer, that they may not be exposed to too sudden changes, particularly patients suffering from pulmonary diseases.

In closing, the Hon. Mark W. Harrington said that the subject was new. He expressed the hope that physicians would perfect it. He asked the question, what is the temperature of the vapor of perspiration? He answered his query by stating that in a freely perspiring surface the temperature must be greater than that for the evaporation of pure water, as perspiration is not a pure fluid.

Beriberi.—Dr. Judson Daland, of Philadelphia, read a paper describing several cases of beriberi, as studied by him at the Philadelphia Quarantine in a mixed crew in a vessel from the East Indies. Temperature normal; heart murmur; epigastric tenderness; finger-tips anæsthetic; again hyperæsthetic; blood examined found to be normal.

Second case: Patient weak; œdema in places; much dyspnœa on exertion; pulsating jugulars; extensive nervous disturbances; anasarcous; tricuspid murmur; examined blood, it was normal; searched for parasites in blood, none were found; anæsthesia of nasal and buccal mucous membranes; no knee jerk; lungs normal; dilatation of right and left ventricles; changes in cutaneous sensibility; in short, a case of neuritis.

The third case was much the same as Nos. 1 and 2. He deemed the cases interesting, as beriberi is rarely recognized in this country. It is a disease of the South. All his cases were sailors. Their diet had been salt-fish of poor quality and rice.

Etiology.—A disease of the East and West Indies. Poor diet is deemed a predisposing cause. Dr. Ashmead thought it due to causes produced in vessels with cargoes of sugar. A fermentative action. Men had no symptoms of scurvy. He thought it a peripheral neuritis. First the Egyptians in the crew were affected, then the others.

Dr. A. Gihon, of the U. S. Navy, was quite familiar with beriberi; had seen it during his sea service. Saw eight or ten cases last fall when the Brazilian men of-war were in New York Harbor. The cases described by Dr. Daland were admirable word pictures; such cases got well under good diet and improved hygienic conditions. He deemed beriberi a disease of malnutrition. He did not believe that sugar cargoes had anything to do with it. Certainly the Brazilian men-of-war were not sugar-laden. To repeat, he believed it to be a simple disease of malnutrition.

Dr. William H. Daly, of Pittsburg, thought it might be due to ptomaïne intoxication. There was no degeneration or disease properly so called. Thought that there might be digestive fermentation and subsequent ptomaïne intoxication.

Dr. Wolfred Nelson, of New York, asked Dr. Daland if any chemical or microscopical examination of the urine had been made.

Dr. Guy Hinsdale, of Philadelphia, deemed it a disease of nutrition, and referred to the views of Dr. Ashmead, who thought it due to carbonic-acid poisoning from cargoes of sugar.

Dr. Robert H. Babcock, of Chicago, asked if all recovered. Wanted to know if they were cases of acute cardiac asthenia with dilatation, such as we meet in typhoid and kindred conditions.

Dr. Daland, in reply, said, that the cardiac condition was very interesting; all recovered perfectly. He deemed it a neuritism and not a degeneration. As to Dr. Hinsdale's question, including that of carbonic-acid poisoning, he thought it a specific infectious disease associated with neuritis. Thought that the crew had been unruly and had been punished by way of the stomach. To repeat, the hearts returned to their normal condition. It was as Dr. Robert H. Babcock had supposed, a simple cardiac asthenia, due to want of tonicity in the cardiac muscle, where dilatation results from weakness. Replying to Dr. Wolfred Nelson, he said that but one test had been made of urine; he failed to remember that it was abnormal.

Dr. Wolfred Nelson referred to his having seen the disease while practising within the tropics in South America. Such cases generally died of general anasarca. Dr. Landon Carter Gray, in his book, included beriberi in his article on "Neuritis," and such it seemed to be.

Malaria.—Dr. William H. Daly, of Pittsburgh, Pa., read the next paper, having for title: "Some Practical Observations on So called Malaria." Dr. Daly thinks the malarial germ one of the infusoria, got in water in lowlands and swampy regions. Referred to cases due to drinking well-water from such lands. He did not deem vapors in marshes as productive of malaria. Some believe that malaria invades at night, that the poison is breathed into the system. He believes that the poison, or germ, is in the water. The habitat of the germ is in the soil. That water in malarial districts always contains the germ. So-called malaria is a water-born disease, the same as cholera.

Malarial fever in the United States is clearly a preventable disease. In the Southern States animals suffer from it. Well-water in the South caused malaria. Those drinking pure cistern-water escaped. The latter were healthy and ruddy. To repeat, malaria gets into the body through the food channels.

Dr. Gihon, of the United States Navy, thought it due to aqueous vapor as well.

Dr. Wolfred Nelson referred to an extended visit by him to the island of Cuba, and related the experience of his friend, the late Dr. John Hartmann, formerly physician to the Uruguay Mining Company, near Santiago de Cuba. The company employed hundreds of Spaniards. They were divided into a day and a night shift. The night-gang slept by day and took a hearty meal on going to work. The day-gang, of course, slept by night. Not a single case of malaria in any of its multiple forms developed in the night-gang, while the men who slept by night and worked by day had malarial and bilious remittent fevers constantly.

Dr. William H. Daly closed the discussion by stating that in five years he believed his views would be accepted by the profession at large.

Physical Signs of Œdema of the Lungs.—Dr. W. C. Glasgow, of St Louis, Mo., read a paper entitled "The Physical Signs of Cellular Œdema of the Lungs, Considered in their Relation to the Pathological Changes." The paper dealt with cases in his practice. He deems the disease due to sepsis. He detailed the symptoms during life, and the changes found post mortem.

Said disease might be due to a gas-producing organism. The signs and symptoms are very perplexing, and often contradictory. He got râles resembling bronchitic râles. Said that there were different degrees of infiltration in the cell-walls and bronchial mucous membrane, not as stages but as types. Infiltration was sudden, and resolution may occur as quickly.

The Grosse Isle Quarantine Station.—Dr. Wolfred Nelson, of New York, informally brought to the attention of some of the members a number of photographs made by him last fall while at the Grosse Isle Quarantine Station, in the St. Lawrence, below Quebec. The situation is an ideal one, an island twenty-four miles down the river, six miles from one and four miles from the other shore. It was an old time and thoroughly organized Government station; forty buildings were up; the majority fully equipped with the latest appliances. They were divided into first, second, and third classes, all in different localities. In case of an emergency three thousand immigrants can be housed. The disinfecting plant is wholly of Canadian manufacture. So extensive is it that the effects of one thousand immigrants can be disinfected daily—dry heat, then live steam at a temperature of 230° F.

Dr. F. Montezambert, Superintendent of the Dominion Quarantine System, is in charge. He has a trained staff under him. There is a special staff for service afloat. Canada to day has a station second to none.

The Society was then adjourned, to meet next year in West Virginia.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting February 28, 1894.

George C. Freeborn, M.D., President.

Papillomata and Papillomatous Cysts of the Ovary.—The President presented a series of specimens of papillomata and papillomatous cysts of the ovary.

Case I.—These specimens were removed by laparotomy by Dr. George M. Tuttle. The patient was thirty years of age, and the mother of two children. Four months previous to the operation she first noticed a tumor in the left iliac region. Since then she had lost flesh and had had considerable pain. At the time of operation, the abdominal cavity contained a small quantity of clear serum. A large papillomatous cyst, adherent to the omentum, was found on the left side, and a papillary mass on the right. The left ovary consisted of an irregular-shaped, lobulated mass of papillary growths, measuring 8½ ctm. in its long, and 6 ctm. in its short diameter. The slightly enlarged tube was attached to the mass by an elongated and thickened mesosalpinx. Its fimbriated end was occluded and rounded off. Section through the mass showed an irregular shaped ovary containing a few follicular cysts embedded in the papillary mass. The left ovary was reduced to a thin-walled oval cyst, to the upper surface of which was attached a slightly enlarged tube. Growing from the upper and anterior portion of the external surface of the cyst, and extending to the tube, was a lobulated papillary mass, measuring 9½ ctm. in length, 7 ctm. in thickness, and projecting 5½ ctm. above the surface. On the posterior surface of the cyst there were also a few small isolated papillary masses. The tube was slightly enlarged, its fimbriated end occluded, and its surface covered with adhesions. Section showed a small portion of ovarian tissue containing a few small cysts, forming the upper portion of the cyst-wall, the remainder being thin fibrous tissue The internal surface of the cyst was studded with papillary outgrowths, varying in size from that of a pin head to that of a cherry. From the surface of the remains of the ovary there was an outgrowth of papilloma. At the external end of the remains of the ovary was a second cyst, containing a small papillary mass.

Case II.—These specimens were removed from a patient in the service of Dr. C. Cleveland, in the Woman's Hospital. She was unmarried, and thirty years of age. Ten months previous to operation she noticed an enlargement of the abdomen, and six months later three gallons of a light brown fluid were removed from the peritoneal cavity by tapping. At the operation, six months later, two and a half gallons of the same kind of fluid were removed. The right ovary showed an oval cyst, 7 × 5 ctm., from the end of which projected an irregular, lobulated papillary mass, 10 × 8 ctm. Longitudinal section through the cyst and papillary mass showed that the cyst grew from the end of the ovary. It was thin-walled and had a lobulated papillary mass, 4 × 2½ ctm in size, growing from the internal surface of the cyst-wall, and appeared to be continuous with a similar mass attached to the outer surface of the cyst. The remains of the ovary were triangular in shape, measured 1½ × 4½ ctm., and were surrounded by a mass of papillary growth. The papillary mass was divided into three lobes, each of which was attached to the ovary by a distinct pedicle. The left ovary was an irregular, papillary mass, 11 × 8½ ctm. Section through the mass showed its central portion to be composed of an oval ovary, 5 × 3 ctm. The ovary contained several small cysts. Along the upper surface of the ovary there was attached a slightly enlarged Fallopian tube. The papillary mass was composed of three lobes, which were attached to the surface of the ovary by distinct pedicles. Two of these were rather broad, the third was long and slender, and was attached to the outer end.

Case III.—These specimens were examined at the request of Dr. George M. Tuttle, who had removed them from a married woman, fifty-two years of age, the mother of four children. The menopause had occurred six years previous. Eight months before operation she noticed an enlargement of the abdomen and œdema of the lower extremities. At the time of the operation a tumor of the abdominal cavity was found extending above the umbilicus. The inguinal lymph nodes were enlarged. Upon opening into the peritoneal cavity a moderate amount of clear serum was found. On the right side was a tumor growing from the ovary and extending out between the folds of the broad ligament. The omentum was adherent to its surface. The left ovary and tube were normal. The omentum showed a papillary mass the size of a cherry attached to its lower border. Microscopical examination showed a small papillary mass distributed very generally over the surface of the trabeculæ.

Case IV.—The specimen was removed from a married woman, thirty years of age, who was in the service of Dr. C. Cleveland in the Woman's Hospital. She gave a history of gradual enlargement of the abdomen extending over a period of six months previous to her admission. During the six weeks prior to operation there was a rapid accumulation of the ascitic fluid, with loss of flesh and strength. Laparotomy was performed and revealed both the ovaries and tubes converted into papillary masses, and so firmly adherent to the pelvic tissues that they could not be removed. The omentum was found adherent to the uterus and intestines and filled with a mass of small cysts. The portion of the omentum presented was removed and the abdomen closed. The patient died twelve hours after the operation, of exhaustion. No autopsy was permitted. The specimen consisted of a rectangular piece of the omentum, measuring 12½ × 11 ctm., with an average thickness of 20 mm. The entire specimen consisted of a mass of small cysts, thin-walled, and containing papillary masses and a clear, thin fluid.

Case V.—This specimen was removed by laparotomy from a woman, twenty-six years of age, who was admitted to the service of Dr. Outerbridge in the Woman's Hospital. The history stated that she was married, but had had no children. Two years previous to her admission she had sharp pain in the left iliac region; one year later she noticed a tumor and also œdema of the lower extremities. The specimen was removed by laparotomy, and consisted of four thin-walled cysts grouped around a central dense mass, from which there sprung an irregular papillary growth. Section showed all the cysts more or less ovoid in shape, the largest measuring 10 × 8 ctm.; the next in size, 9 × 6 ctm.; the next, 8 × 5½ ctm., and the smallest, 6 × 4½ ctm. The interior of all the cysts was more or less studded with papillary outgrowths. The central dense mass was the remains of the ovary, from the surface of which grew the papillary mass.

Case VI.—This specimen was removed by Dr. F. H. Markoe. It was a multilocular cyst 10 × 12 ctm. The Fallopian tube was attached to the surface of the cyst. Section showed three principal cysts with thin walls, the internal surfaces of all being studded with various-sized papillary outgrowths.

A Cylindroma of the Scalp.—Dr. E. K. Dunham presented a cylindroma of the scalp. The tumor was about one and one fourth inch in diameter, one half inch thick, and lenticular in shape, and was situated in the anterior portion of the scalp in the median line. It had been growing slowly for two years, and was regarded as a recurrence in the cicatrix left after the excision of an old wen. After the removal of this tumor the patient, a man aged seventy, lived for one year without any sign of recurrence, and then died of apoplexy. An examination of the first sections had led him to think it was an epithelioma, but careful examination of the thinner sections showed it was a sarcoma, and one in which certain elements had undergone hyaline degeneration. Microchemical tests were made for hyaline material, but with negative result. The specimens exhibited under the microscope showed the alveoli filled with small, round cells, and among these cells small hyaline bodies. The speaker said it had occurred to him that these hyaline bodies were degenerated capillary vessels, but he was doubtful about this because he had been unable to find any transition forms, and moreover, there was hyaline degeneration not only of the blood vessels, but of the fibrous tissue, as the capsule exhibited the same degeneration.

Dr. E. Hodenpyl agreed to the diagnosis of cylindroma, but objected strongly to the use of the term "cylindroma," which was vague and unsatisfactory.

Congenital or Infantile Myxœdema.—Dr. W. P. Northrup presented photographs of three cases. These cases were being treated by the internal administration of the glycerine extract of the yearling sheep's thyroid. It had been found that a daily dose of three drops kept the temperature at about the desired point—100° F. The photographs showed very well the peculiar physical characteristics of these children.

Carcinoma of the Liver, Stomach, and Lungs.—Dr. E. Hodenpyl presented specimens from a case of carcinoma of the liver, stomach, and lungs. The case was remarkable on account of the enormous extent of the lesion, the very short duration of the disease, and the very moderate discomfort which it caused. The patient was a man, forty six years of age, whose family history and previous history were negative. His last illness dated back to the latter part of October, 1893, when he began to experience a heavy sensation in the upper part of the abdomen, and a distress after eating, which, however, was not aggravated by eating. There was no vomiting, pyrosis, or eructation of gas. He gradually developed dyspnœa. When admitted to hospital, on January 31st, he was moderately emaciated and pale; the urine was normal. Physical examination showed the heart and lungs to be normal. Hepatic dulness began in the fifth space, and ended two inches below the free border of the ribs. The spleen was not enlarged. There was a good deal of constipation, but no vomiting, while he was in the hospital. He died comatose. At the autopsy the left lung was found studded with a moderate number of yellowish-gray nodules. The right lung was considerably compressed, the liver was enlarged, the gall bladder normal, and the cystic duct pervious. Extending along the entire length of the lesser curvature of the stomach, but not involving either the cardiac or pyloric orifices, was a large carcinomatous nodule the size of a small orange, and adjoining it a thickened portion of new-growth and a large area of ulceration. The liver, together with the pancreas and stomach, weighed fourteen pounds.

Hypertrophy of the Prostate; Carcinoma of the Bladder; Hydronephrosis; Chronic Bright's Disease.—Dr. Hodenpyl also presented specimens removed from a man, sixty-six years of age, who was admitted to the hospital on February 20th. It was impossible to obtain an accurate history from him. He had been quite intemperate. He said that about two months before admission he became very obstinately constipated, and there was inability to urinate except in small drops. On admission, there was œdema of the legs, scrotum, and penis; his temperature was 100° F.; respiration, 20. The urine was very bloody, alkaline, had a specific gravity of 1.013, and contained seventy-five per cent. of albumin by volume. The daily quantity of urine voided for three successive days was six, two, and sixteen ounces respectively. The urine was drawn by the catheter while he was in the hospital, and was always very bloody. Physical examination showed fluid in the abdominal and pleural cavities.

The chief point of interest in the case was found on the peritoneal surface just adjoining the right kidney—a series of intercommunicating sacs, many of them ending in blind pouches with thickened edges. Some of them were ulcerated. The ureter passed over this curious mass into the kidney. The speaker said he was unable to explain this condition except on the supposition that it was either a secondary growth or fœtal remain. He would report upon it more fully at another time.

Dr. T. S. Southworth presented the lungs from the twin of the child whose lungs were presented by him recently. This child was fifteen months old, and weighed at birth four pounds and a half. Last May it had severe pertussis, and in the third week of the disease a bronchopneumonia for six weeks. After this it gained slowly up to five weeks ago. Two weeks ago it developed fever, and fine crackling râles over the chest, anteriorly and posteriorly, with a temperature of 100° to 103° F. It died suddenly. At the autopsy the left lung showed adhesions posteriorly, and the right lung general firm adhesions, evidently older than in the other lung. The bronchial glands were markedly enlarged on the right side, but were not cheesy. There was consolidation and a fairly uniform white mottling of the right lower, right middle, and posterior half of the right upper lobes. There was also consolidation of the posterior half of the lower lobe of the left lung, with the same mottling. The spleen was much enlarged and congested. The mesenteric glands were not enlarged. This child was also supposed to be tubercular, but the lung showed the form of broncho pneumonia not infrequently mistaken for tuberculosis. It was worthy of note that notwithstanding the history the bronchial glands were not cheesy.

Abscess of the Liver Mistaken for Empyema.—Dr. J. M. Byron reported this case. The case occurred in Bellevue Hospital, and the diagnosis of empyema was made because exploratory puncture and the physical signs pointed to this condition. An opening was made on the right side at the usual point, and some pus withdrawn. The man died, and on autopsy absolutely nothing was found in the pleural cavities except a very slight pleuritis on the right side. In the posterior and upper part of the right kidney, however, was a very large abscess cavity, which communicated with the operation wound. The diaphragm was intact. There was no ulceration in the intestines, or anything to account for this abscess in the liver.

Exophthalmic Goitre.—Dr. Henry Power reported a case of exophthalmic goitre treated with the thyroid extract; death in six weeks. The only other case of the kind, so far as he knew, had been reported by Dr. Owen, in the *British Medical Journal*. His own patient was a Swedish domestic, twenty-four years of age, in whom rather large doses of the thyroid extract were used—seven to nine drops three times a day. At first there was general improvement, and shrinkage of the tumor to half its former size, but this was followed by a return of the former condition, and by a deterioration of her general health. The dose was quickly reduced, and finally stopped, but three weeks after the last dose the patient became comatose and died. At the autopsy, which was made twenty four hours later, it was noted that there

was marked emaciation, together with enlargement of the thyroid. The heart, lungs, and kidneys were normal; the uterus was small and of the infantile type; the spleen was not enlarged. The thymus was present; it measured 3½ × ¾ × ½ inches, and weighed 13 gm., after partial hardening. The thyroid showed great symmetrical enlargement, and weighed 40 gm. after partial hardening. The brain could not be examined. Microscopical examination of the thyroid showed the stroma normal, and the epithelium greatly proliferated. Some of the alveoli were lined with cuboidal epithelium, others with cylindrical cells, while others again had no regular lining. The stroma of the thymus appeared to be normal; the cells stained with difficulty. The liver contained some fat. The kidneys were lobulated and contained hyaline casts. They also showed degeneration and congestion.

Cancer of the Œsophagus.—Dr. Henry P. Loomis presented the specimen. The patient was a man, fifty-three years of age, who had an excellent family history, and also a good previous history, except that he said he had had a slight bronchitis for many years. His last illness began last August with anorexia, uneasiness in the epigastrium, and slight vomiting. The pain was most intense in the left hypochondriac region and near the xiphoid cartilage For two months he could only take solid food with difficulty, and then finding that solid food caused pain he swallowed nothing but oatmeal and milk. On admission he was very greatly emaciated, had a haggard, apathetic expression, and vomited curdled milk. Physical examination of the abdomen showed an area of flatness about four inches in diameter, with its centre one inch below the xiphoid cartilage.

The autopsy was made thirty six hours after death. No pathological lesion was found in any of the organs or tissues until the stomach and œsophagus were opened. A firm, dense, cancerous infiltration was found in the wall of the lower portion of the œsophagus and the œsophageal end of the stomach. About three inches of their walls were infiltrated with a dense mass which narrowed the opening of the œsophagus into the stomach to such a degree that it was with difficulty that an ordinary penholder could be introduced down the œsophagus. There was no ulceration or involvement of the rest of the stomach wall. The infiltration presented the ordinary appearance of a scirrhous cancer. There was marked atrophy of the intestines. The patient apparently died of inanition due to mechanical obstruction, which interfered with the introduction of food into the stomach.

Cancer, the speaker said, was the most frequent form of tumor met with in the œsophagus, and statistics showed that the seat of the tumor in this case was the most frequent portion involved. The extreme narrowing of the tube was due partly to the infiltration, and partly to the contraction of the newly formed connective tissue as the result of the irritation of the new growth. The dense infiltration no doubt produced the feeling of obstruction which was constantly referred to by the patient during life. The absence of ulceration was unusual. The œsophagus and stomach at the site of the cancer were tightly bound to the cellular tissue behind them. The tumor was diagnosticated during life, and an operation advised. If this advice had been followed, no doubt the patient's life would have been prolonged considerably by the establishment of a gastric fistula.

Primary Tumor of the Heart Wall.—Dr. H. P. Loomis presented a specimen of tumor of the heart wall which had caused sudden death. At the request of the coroner a post mortem examination was made on W. J——, thirty-five years of age, who was found dead on the floor of his bedroom by the servant who came to awaken him in the morning. A friend, in whose room he had spent the previous evening, testified that he left him about eleven o'clock, apparently as well as ever; but on being questioned further, the witness recalled the fact that his friend had complained of some distress over his heart two or three times while they were together. The man must have died immediately on reaching his bedroom, for he was found stretched on the floor with his hat grasped in his hand. Careful inquiry was made of his friends, who stated that he had not been sick for years, nor had he even complained of feeling ill during the month preceding his death. He had attended regularly to business. He was a moderate drinker, but at times indulged to excess. No syphilitic history could be obtained. The autopsy was made twelve hours after the body was found. He was a robust man, of excellent physique, and weighed one hundred and seventy-five pounds. There were no marks of external injury. The liver and kidneys showed the lesions of extreme passive congestion, with moderate cirrhosis of the liver. A most careful examination of all the other organs, including the brain, failed to reveal the slightest abnormality until the heart was opened. Here a lesion was found—one of the rarest met with in post mortem examinations. A circumscribed tumor of a yellowish-white color, firm in consistency, non capsulated, was found embedded in the anterior wall of the left ventricle. Its dimensions were ¾ × 1¼ × 2 inches, and it involved over one-third of the wall of the left ventricle. Neither the endocardium nor the pericardium over the tumor was involved. The heart weighed sixteen ounces. The left ventricle was very much dilated, and as a result there was marked insufficiency of the mitral valve. There was no hypertrophy of the heart wall. The valves were normal, as was also the endocardium. A large, soft, red, non-adherent blood-clot filled the cavity of the left ventricle. The right ventricle was free from blood, slightly dilated, and its wall was somewhat thickened. The coronary arteries were normal. The thoracic and abdominal aorta showed the lesion of an extensive aortitis, involving the greater portion of its inner coat. A section cut so as to include the heart wall and the greater portion of the tumor showed on microscopical examination that it was composed of small round cells, with here and there, near the centre, cheesy spots. In a few places, giant cells could be seen, as also amorphous basement substance between the round cells. In places young connective-tissue formations could be seen. The tumor was moderately supplied with small blood-vessels in its outer portion. It was not encapsulated. The round cells could be seen running between the muscle fibres in its external zone. Sections of the tumor were stained for tubercle bacilli with negative result. Gram's method failed to reveal the presence of any micro-organisms. From a careful examination of all portions of the tumor an unqualified diagnosis of a syphilitic gumma was made. This diagnosis was later confirmed by Dr. T. M. Prudden, who examined the specimen.

Primary tumors of the heart are exceedingly rare, although secondary tumors are not of infrequent occurrence, especially secondary carcinomata. Virchow in his Archives, vol. xv., describes the following tumors as being found in the heart wall: sarcomata, fibromata, lipomata, myxomata, and syphilomata. The last he says is among the rarest tumors met with. This is the second case of primary syphilitic gumma which the speaker had met with in the last ten years, the other case being that of a prostitute, thirty years of age, who died of lobar pneumonia. The present case is also of interest because it was no doubt the indirect cause of the man's sudden death, which must be explained by the sudden over distention and inability of the left ventricle to empty itself. Nearly one-half the muscle fibre of the left ventricle wall was destroyed by the new growth.

Syphilis is known to affect the heart in two ways, viz.: 1, by the formation of a gummy tumor, as in this case; and 2, by setting up an indurated myocarditis, the localized and extensive fibrous indurations in the muscle tissue being generally associated with a fatty degeneration of the muscle fibre. Cheesy masses are often found in these indurated areas, and the question has been raised as to whether they may not be gummata in process of absorption. Lancereaux mentions two cases of waxy de-

generation of the heart wall which he refers to as one of the manifestations of tertiary syphilis, but his observations have not been confirmed by other observers. No doubt syphilitic gumma in various stages of development and metamorphosis is the most characteristic lesion of tertiary syphilis affecting the heart.

Carcinoma of the Wall of the Stomach.—On behalf of Dr. Le Fevre, Dr. Loomis also presented a specimen of carcinoma of the wall of the stomach. The specimen was removed from a married woman, thirty-one years of age, whose family history was good. She had enjoyed good health up to six months after her last confinement, or up to one year and nine months ago. She was slightly anæmic at this time, but quickly recovered. Five months later she came under Dr. Le Fevre's care, complaining of very severe pain in the stomach, accompanied by vomiting. Her weight had been reduced in a short time from one hundred and forty pounds to one hundred and fifteen. She improved temporarily under tonic treatment. Four months later there was extreme pain in the epigastrium, radiating through to the angle of the left scapula. With this there was incessant vomiting and also some fever. Six days later, the thickened wall of the stomach was mapped out by physical examination. She then passed from under his observation. She was reported to have suffered constantly. She never vomited blood. At the autopsy, the body was found to be extremely emaciated; the lungs, liver, and intestines were normal; the uterus and ovaries were also normal. The stomach was adherent to the spleen, and these were adherent to the upper portions of the intestine. There was very extensive cancerous infiltration of the wall of the stomach, beginning at the pylorus, and involving by far the greater portion of the stomach. Incidentally, the heart was of interest, for, while presenting no organic disease, it was as small as the heart of a child.

Dr. Byron said he had examined some of the sections of the tumor of the heart wall, and the structure was not at all characteristic of gumma of the heart. The round-cell infiltration was very extensive and uniform, and all of the cells seemed to be nearly of the same age without any discernible degeneration in any portion of the tumor. The giant cells, which reacted to eosin almost like muscular tissue, seemed to him to be simply muscle fibres in which the inflammation had given rise to the proliferation of the muscle nuclei.

Dr. Loomis said that as the case had been variously diagnosticated as interstitial myocarditis, abscess of the heart, sarcoma of the heart, etc., he would be very glad to have the specimen examined by the Committee on Microscopy. He did not think, however, that it was possible that the giant-cells were really muscular nuclei.

The specimen was referred to the Committee on Microscopy.

The society then went into executive session.

Stated Meeting, March 14, 1894.

George C. Freeborn, M.D., President.

Tuberculosis of the Bladder and Kidneys.—Dr. W. G. Le Boutillier presented specimens from a case of the above. They were removed from a man thirty-five years of age, who had one testicle removed ten years before, probably for tubercular disease. There was no history of the beginning of the tuberculosis. At the time of death there was tuberculosis of the lungs, of one hip-joint, and of several vertebræ. The pelvis of each kidney contained a mass of cheesy material and several cheesy masses also in the cortex. The right ureter was much dilated, but there was no evidence of obstruction. While the patient was under observation some of the urine was injected into a guinea-pig to confirm, if possible, the tubercular nature of the disease. The guinea-pig was found dead about eight weeks later, and examination showed cheesy masses at the site of the inoculation and also general peritonitis and tubercular lesions of the lungs and spleen. Tubercle bacilli were found in the patient's urine.

Bovine Tuberculosis.—Dr. George P. Biggs presented portions of organs showing the characteristic lesions of bovine tuberculosis. The specimens were brought to him by a veterinarian, who stated that large numbers of tubercles were found in the lungs, heart, mesenteric glands, mediastinal glands, peritoneum—in fact in all of the organs. The animal was a Jersey cow, and its milk had been used up to about two weeks before the animal was killed. It had been slightly ill for a few weeks, and had had a slight dry cough, which, however, two veterinarians had said was of no significance. The animal also had a good deal of difficulty in breathing, and examination showed a large number of dry râles. The specimens presented comprised portions of the liver, spleen, lungs, mesenteric glands, and udder. In the section from the udder there were no distinct giant cells, but rather epithelioid tubercles. The tendency to caseation was very marked. The speaker said these caseous masses usually became encysted, and after considerable time underwent calcification. Unfortunately no examination was made of the milk. Among the characteristic features of tuberculosis might be mentioned, (1) a series of outgrowths from the serous membranes often attached together like bunches of grapes; (2), the tendency to calcification; and (3) the proneness to the formation of fibrous tissues.

Dr. Le Boutillier asked for further information regarding the diagnosis of bovine tuberculosis. He understood that recently the diagnosis had been made by injections of tuberculin.

Dr. J. S. Ely said that for some months past he had been examining material sent him by the cattle inspectors of the State Board of Health. They have been using tuberculin quite extensively and with good results. Last November he went to Barren Island to see some condemned animals slaughtered. Out of the seventy-two cattle, sixty-eight had given the characteristic reaction with tuberculin, and after slaughtering, just sixty-eight of the animals were found to be tubercular. The normal temperature of cattle was higher than in the human subject, about 102° F. After the injection of the tuberculin, the temperature rose within seven hours to 104° or 105° F., and in the course of four or five hours more, fell to the normal. This was considered the typical reaction. The herd referred to was a valuable one, being worth about thirty thousand dollars, and consequently the owner had employed several veterinarians to examine the cattle. One prominent veterinarian said they were not tubercular, and another coincided in this opinion, yet many of the animals when slaughtered showed lesions nearly as pronounced as those seen in the specimens just presented.

Dr. T. M. Prudden said that a farmer came to see him recently in regard to a herd of Jersey cattle which he suspected had become infected with tuberculosis. Only about thirty cattle seemed to be sick, and as these thirty gave the characteristic reaction with tuberculin. they were killed, and were found to be tubercular. The owner then determined to sacrifice an apparently healthy animal to determine still more definitely the value of this test. An animal which did not give the reaction with tuberculin was slaughtered and was found to be free from tuberculosis. The power of this breed of cattle to produce milk and butter seemed to be at the expense of their resisting power to tuberculosis. The very long series of experiments of Dr. Ernst, published before the Association of American Physicians in Washington some years ago, and a similar series in Germany, showed that it was not at all necessary to have any involvement of the udder to have tubercle bacilli in the milk.

Osteosis of the Skin of the Foot.—Dr. Warren Coleman presented the specimen. He said that in March, 1892, Dr. Sherwell presented a case to the Dermatological Society for diagnosis. The patient, a girl six years of age, of American parentage, had an erosion in the sole of the left foot which the mother had first

noticed about two and a half years previously. It was a thickening of the skin and subcutaneous tissue, occupying about one-third of the plantar surface of the foot, chiefly under the os calcis, and a little to the outer side. It was learned that a year and a half after the lesion in the sole had appeared, the fourth toe became involved, and gradually increased in size, the skin of the entire toe taking part in the process, though the lesion was most advanced in the distal phalanx. The enlargement was symmetrical, and the toe attained a diameter of 1 ctm. At that time Dr. Sherwell described the condition as follows: "The lesion now consists of a plaque of cartilaginous hardness, studded here and there with tubercular nodosities, about six in number, the whole occupying about one-third of the external plantar surface of the left foot. The skin and subcutaneous cellular tissues are all involved in the process, still the plaque can be moved relatively freely over the subjacent tissue. The epithelial tissues, while somewhat thick and horny, present no other unusual features. There are few subjective symptoms while the foot is at rest, but on account of the hardness it is difficult to walk upon, it seeming to act as a foreign body without the irritation the latter would cause. The little patient always walks on the ball of that foot. The lesion on the fourth toe is of the same relatively painless character, and is curiously clubbed on top, and the peculiar cartilage like feel is also present. On no other part of the limbs or body is anything that is abnormal. The child is of healthy parents as far as can be ascertained, and is a healthy child. I cannot class the trouble as scleroderma or carcinoma *en cuirasse*, and present her for diagnosis."

In December, 1892, the plaque and fourth toe were removed by operation and were hardened in alcohol. It was noticed at the operation that in cutting out the plaque the knife met with more resistance beneath it than normal subcutaneous tissue would have offered, even in the sole of the foot.

It was learned from Dr. Sherwell that the growth had recurred and was now advancing. The scar was adherent to the bone, and in front of the scar the skin and subcutaneous tissue were infiltrated with a substance which from its hardness and resilience seemed to be cartilage. It was of new formation, having appeared since the time of the operation. Dr. Piffard decalcified a portion of the growth in a two per cent. mixture of nitric acid and ninety-five per cent. alcohol, and as an examination of sections from this piece showed a general infiltration of the skin with bone, rather than a distinct tumor formation, he suggested the name "osteosis." The body of the plaque, its advancing edge, and the toe were examined. The latter was cut at two different levels—through the body of the phalanx, and through the articular cartilage—with a view of determining the origin of the process. The staining of the cells was somewhat interfered with by the use of this mixture for decalcification. Twenty different sections were studied.

The sections through the body of the plaque showed cancellous bone close up to the epidermis. The spicules varied in size and shape, and were irregularly distributed throughout the tissues. The interspaces were filled chiefly with fat-cells, blood-vessels, and a loosely woven connective tissue. Small nerves were found here and there. The sweat-glands and their ducts appeared normal. In this part of the growth the spicules were the most abundant, which would account in part for its greater hardness, but they were also smaller. There were irregularities in their size and shape apparently due to absorption. Frequently distinct rows of cells might be seen along the sides of the spicules, but as a rule they did not lie under a definite membrane. Large multinucleated cells were sometimes associated with them, especially where the spicules were thinnest. Mingled with the fat-cells generally in the interspaces was a tissue of marrow-like structure, consisting of uni-nucleated cells a little larger than lymph-cells, the nucleus occupying nearly all the protoplasm. The large multi-nucleated cells occurred with these, and fine connective-tissue fibres ran among them all in different directions. Some of the spicules consisted merely of a homogeneous ground substance with rounded or flattened cells scattered through it; in others, the cells were branched, and arranged in irregular rows, or were disposed in concentric rows around a central opening. No distinct fibrillation could be made out in any of them. As a rule, the spicules were composed of irregular lamellæ, between which were branching lacunæ, filled with bone corpuscles. Small blood-vessels were included in the larger masses of bone, and in rare instances the lamellæ were arranged concentrically around them, but there was a lack of regularity characteristic of the Haversian system in the disposition of the bone corpuscles. The connective tissue immediately under the epidermis was very dense, in fact, was almost tendinous in structure.

The edge of the plaque was not so thick, and contained less bone than the part just described. It contained also masses of cartilage. Some of the cartilage-cells were branched. There was also reason to believe that a transformation of fibrous tissue into cartilage was taking place, for cells immediately adjacent to cartilaginous masses might be seen increasing greatly in number, and arranging themselves between bundles of dense fibrous tissue, and becoming flattened out. They were of the same size, shape, and appearance as the outermost cells of the cartilage, and merged imperceptibly into them. They corresponded very closely with cells in a like situation in an ossifying tibia from a six months' fœtus. There was an entire absence of rows of osteoblasts around these centres. This transformation was suggested in certain sections from the older part of the growth, but in them, as a rule, the ossification of cartilage already formed was the most prominent feature. The method by which the cartilage extended would explain the absence of a periosteal layer, but without a periosteum it was not so clear why the osteoblasts arranged themselves in definite rows along the sides of the calcareous cartilages.

In all essential details ossification was proceeding regularly. Many of the spicules had ossified only so far as the deposition of calcareous granules in the cartilaginous matrix without any noticeable change in the appearance of the cells. As ossification proceeded the cells swelled up, but did not, as a rule, arrange themselves in any characteristic manner. Rows of osteoblasts developed along the sides of the cartilaginous masses, with or without the occurrence of the large multi-nucleated cells or osteoclasts. Then the irruption commenced. The irregular openings found in many of the spicules might be explained in this way, for they contained both kinds of cells. The presence of these large cells, or osteoclasts, in certain of the spicules would also suggest this formation having burrowed there from the side. Only in exceptional instances did the osteoblasts lay under a definite membrane. Where ossification was complete, both osteoblasts and osteoclasts had disappeared, and the bone had an irregularly lamellar or concentric arrangement. The lacunæ were branched, and filled with bone cells. There were several areas in which typical ossification occurred, with marked swelling of the cells, their arrangement in definite rows, irregular absorption of the cartilaginous matrix, and the entrance of blood-vessels into the spaces thus formed.

A section through the body of the phalanx of the toe showed a notable absence of new bone in the dermis and sub-dermic tissues. An excessive development of very dense, almost tendinous, fibrous tissue was the principal cause of the increased diameter of the toe. All the normal elements of the skin were present. The central canal of the bone contained spicules of irregular shape and arrangement, with fat cells and blood-vessels filling the interspaces. The number of bone corpuscles was noticeably small and there were no osteoblasts along the sides of the spicules. In the cartilaginous ring which surrounded these and to which they were attached, ossi-

fication proceeded regularly. But there was no periosteum even here, and at irregular intervals around its periphery the transformation of fibrous tissue into cartilage, with a consequent extension of the ring, was more evident than in sections from the edge of the plaque. Where the cells were distinctly cartilage-cells, and even where they had begun to swell and arrange themselves in a definite manner for ossification, fibrous bands could be seen running among them. Instead, however, of the cells arranging themselves in rows at right angles to the advancing line of ossification, they became grouped, apparently from repeated subdivision, the number of cells in such group being a multiple of two. At this point absorption began with the subsequent building up of the spicules that were left. The cells in the outer part of the cartilage where it was extending were flattened, and some of them were slightly branched.

Concerning the sections through the articular cartilage, it was worthy of note that a true epidermic formation, consisting of all the layers quite perfectly developed, ran in crescentic form one-fourth the way around the bone, and almost immediately adjacent to it. A number of sections, as well as the block from which they were cut, were carefully examined to make sure that this did not result from an accidental infolding of the skin.

It would appear that primarily there was a hyperplastic formation of very dense connective tissue, that this was transformed into cartilage, which was extended by a further transformation of the adjacent fibrous tissue and the subsequent ossification of the cartilage. This transformation of fibrous tissue into cartilage could not be regarded as a pure metaplasia because of the marked cell-proliferation accompanying it. There was nothing to warrant the belief that the lesion originated from the periosteum or pre-existing cartilage. The increased size of the toe was principally due to an excessive development of fibrous tissue. The extension of the cartilaginous ring seemed to be simply a part of the general process, and not the starting point of it. If the process had begun by an extension of the pre-existing cartilage it would be reasonable to suppose that the plaque would have been attached to the underlying bones, but such was not the case. While it was true that bone was present throughout the entire depth of the sections, ossification had been completed in the parts just beneath the epidermis. As it was probable that the ossification began in the cartilage first formed, the speaker thought the transformation first occurred in the dermis itself, or immediately below it. Metaplasias, both physiological and pathological, were of common occurrence, but as Ziegler had said, these metaplasias "are confined to the connective tissues; fibrous tissue, cartilage, bone, mucous tissue, and adipose tissue, are, so to speak, potentially convertible." The sesamoid fibro-cartilages formed in tendons might be cited as instances of the transformation of fibrous tissue into cartilage. Arterial sclerosis sometimes resulted in the formation of cartilaginous patches in the walls of the vessels. In myositis ossificans there was a transformation of fibrous tissue into bone. The proneness of hyaline cartilage to ossify was well known.

The most rational explanation of the etiology of this case seemed to be that it was due to a congenital disposition to hyperplasia and metaplasia of the connective tissue in the derma and subdermic structures. Syphilis might be excluded, and it could not be ascribed to any special irritation resulting in an inflammatory condition, as the history showed a notable absence of signs of inflammation. When bones developed in abnormal situations in the body they were usually the result of long-continued irritation leading to inflammation. In rider's bones we had an example of bone formation from long-continued pressure, though the ossification might be at times of syphilitic origin.

Occlusion of the Ileo-cæcal Valve by a Plug of Mucus: Extreme Interstitial Emphysema of the Lungs.—Dr. James Ewing presented the lungs, ileum, and colon which had been removed from a child who died fourteen hours after birth. The presentation was L. O. A. and the labor natural. The second stage lasted one hour. There was considerable asphyxia of the child at birth, so that four mouth to mouth insufflations were made, after which it seemed to breathe naturally. It was not long, however, before the breathing again became bad, and the child cyanotic, and these symptoms persisted until death. One hour after death the autopsy was made. The abdominal wall was tense and protuberant. The liver, which had been pushed upward, descended as the abdomen was opened. The lower six inches of the ileum were found collapsed. Above this point the intestine and stomach were excessively distended with gas. The lower two feet of the ileum contained a tough cord of mucus which protruded through the ileo cæcal valve and completely occluded it. Six inches above the valve it formed a plug which was not easily detached. The lungs showed great compression, especially in the lower lobes, and while they were largely atelectatic they were not consolidated. Scattered over both lungs were many prominent vesicles showing extreme interstitial emphysema. Two or three large vesicles covered two-thirds of the internal surface of the right lung. The cerebral sinuses were intensely engorged. There was a large blood clot in the stomach. Blood serum was oozing from the nostrils.

The speaker said he had been unable to find in the literature any reference to such a peculiar mucus cord as the one found in the ileum. The enormous quantity of air in the stomach and intestine was accounted for by the insufflations, the air having expanded somewhat probably under the heat of the body. The distention interfered with respiration and proved the immediate cause of death in the infant already asphyxiated. It had been stated by Delafield that distention of the stomach with aërated mucus might become a serious complication in bronchitis in infants. Possibly the emphysema was caused by the forcible insufflation, but this hardly seemed sufficient to explain it. Most writers on the diseases of children stated that the chief cause of interstitial emphysema was violent expiratory efforts with obstruction to the expired air. While there was no consolidation the compression of the lung from the abdominal distention produced atelectatic areas. The hemorrhages and venous congestions were due to the asphyxia, which was the manner of death.

Dr. Prudden said he saw this mucus cord, which resembled a tape-worm in many respects, although anyone would avoid confounding the two.

The Society then went into executive session.

Naughty Editors.—A Philadelphia contemporary says that a gentleman who entertained with a banquet the American Medical Editors' Association in San Francisco, is reported to be actively interested in a much advertised secret nostrum.

Death of a Lady Bicyclist.—The death of the lady cyclist from syncope after a bicycle ride is, of course, the text for many fraternal warnings, and advice to lady bicyclists to give up the enjoyment of an exercise in which it is feared they may indulge to excess. They are, of course, told by some that bicycling is unlady-like, if not unwomanly, and that women do not know how to practise the careful restraint in such matters to which men are accustomed. They may very well afford, however, to treat all this sage advice as at least superfluous. So far from being unsuited for woman, bicycling is an exercise in which they may indulge with perfect security, and generally with much advantage. We are persuaded that they are as little prone to excess in athletics as are the generality of men, and within reasonable bounds we should like to see cycling as generally practised by women as by men, and it would be greatly to the advantage of many cycling clubs and cycling resorts that the lady-like element should be more largely introduced.—*British Medical Journal.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE EXTRA MEETING OF THE MEDICO CHIRURGICAL SOCIETY—LAWRIE OF HYDERABAD ON CHLOROFORM—DISCUSSION OF HIS VIEWS—A MUNIFICENT ENDOWMENT OF SCIENCE—THE INSTITUTE OF PREVENTIVE MEDICINE—MR. A. BALFOUR, M.P., ON SCIENCE—THE COLLEGE OF SURGEONS ELECTION—SIR GEORGE HUMPHRY—THE APOTHECARIES COMPANY.—THREATENINGS OF CHOLERA—CIRCULAR OF LOCAL GOVERNMENT BOARD—HOSPITAL SUNDAY FUND—DISCONTENT OF SOME SUPPORTERS—THE CHELSEA HOSPITAL INQUIRY—BARONETCY FOR THE DUCHESS OF YORK'S ACCOUCHEUR—FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

LONDON, July 7, 1894.

THE extra meeting of the Royal Medico-Chirurgical Society which I announced as arranged for in my last, was held on Tuesday. The object being to enable Surgeon Lieutenant-Colonel Lawrie, while in London, to state his views on chloroform. These views will be familiar to your readers from the report of the Hyderabad commission, of which Dr. Lawrie is the father. It is therefore unnecessary to give an abstract of his communication to the Society, but the conclusions he submitted were: 1. That chloroform had no direct action on the heart. In support of this he explained an enlarged photograph from the fed animal in a cross-circulation experiment in which chloroform sent to the heart alone produced no effect whatever. 2. In a similar experiment chloroform sent to the brain alone produced its usual effects by acting on the brain centres. 3. He showed the difference from the same illustrations between taking respiration or pulse as a guide to the effect of chloroform when the respiration was regular. 4. Similar differences under the same conditions, but when respiration was irregular from vagus stimulation. 5. He exhibited a tracing to show that chloroform anæsthesia without respiratory complication was free from risk.

Looking at the discussion that has taken place on the Hyderabad commission Dr. Lawrie could not expect these conclusions to meet with unanimous assent, but he must be gratified with the amount of support he received at the Society and the great respect shown to his labors by even those who cannot endorse his views.

Drs. Gaskell and Shore both spoke. It is known that their experiments do not exactly coincide with Dr. Lawrie's. They admit that respiration fails first, but they think chloroform has also a direct action on the heart. In one of their cross-circulation experiments the respiration continued five minutes after the heart ceased to beat. Dr. Brunton suggested that peptones which had been used to prevent clotting of the blood, being poisonous, might account for some of the results, and held that it was certain that chloroform paralyzed the respiratory centre before affecting the heart. He speculated a little on the possibility that the increased consumption of meat of late years may have some relation to the increased fatality of chloroform, especially as strong, healthy men, on full diet, gave most trouble, and were more likely to have alkaloidal products circulating in the blood.

Mr. Horsley felt sure Dr. Lawrie was right as to most cases, and he exhibited a series of tracings on the screen to show the mode of death in bullet wounds of the brain, and said it was precisely similar in all cases of cerebral compression. Mr. Bailey said the pulse should be watched as well as the breathing. Dr. D. Buxton thought a considerable proportion of deaths were due to carelessness, and only a few to primary action on the heart, but he admitted that probably the secret of safety was to watch the breathing. Dr. D. Newman had seen two cases of cardiac failure, and in one of them the pulse stopped, although breathing continued and air entered the chest freely. He thought the respiratory centre more likely to fail than the heart. Dr. Hewitt also mentioned a case in which respiration continued though no pulse could be felt at the wrist, and he thought that we should be led into difficulties if we looked to the respiration alone in profound anæsthesia. Dr. Lazarus-Barlow exhibited a tracing taken directly from the heart of a curarized animal, to show that cardiac failure began with the commencement of inhalation, respiration failing later. Dr. Silk declared that an increased number of deaths had taken place since the Hyderabad report, and that though respiration should have primary attention the pulse must also be watched.

Dr. Lawrie in reply remarked that the sudden stoppage of the heart in the cases mentioned could only have been produced by stimulation of the vagus through the respiration—that the experiments of Dr. Lazarus-Barlow indicated some damage to the circulation in the lungs. He had found no difference in the effects of chloroform on Europeans and natives. In seven hundred cases the pulse had been carefully watched, but gave no indication. Finally, he said it is impossible to teach a careless man to give chloroform safely.

Mr. Mond has endowed scientific research in a munificent manner. He has bought the Earl of Albemarle's mansion, contiguous to the Royal Institution, and presented it to that body. Further, he proposes to meet the cost of converting it into a laboratory, and equipping it for chemical and physical research. He intends also to endow it with sufficient income for maintaining it and employing a skilled staff. This splendid addition to our scientific resources is to be called the Davy-Faraday Research Laboratory, and its establishment is expected to cost Mr. Mond some £100,000. The old country is not yet destitute of munificent donors.

The British Institute of Preventive Medicine is in a fair way of success. The site has been purchased and some important sums have been secured, *e.g.*, £10,000 from the Grocers' Company—one of the most liberal of the city companies; £20,000 from the Berridge trustees, and a further £25,000 is about to be handed over from the same source. The College of State Medicine will also hand over its plant and money to the Institute, in value above £4,000. Some of the investigations I have mentioned in previous letters were carried out for the Institute, and now that a suitable building is about to be erected the silly opposition of the antis to this undertaking may be diverted into other channels.

Mr. Arthur Balfour, who so rapidly rose to the highest position in Parliament, is a metaphysician of no slight attainments and a profound economist. Speaking last week at the Economic Association he touched on scientific investigations with a light but firm hand. He said the public had never yet mixed themselves up in these matters without spoiling the investigations and doing themselves a great deal of harm. When the public took up a question, party feeling—necessary in political affairs—was sure to come in and as sure to produce disastrous results. He instanced the question of vaccination, which the doctors thought they had settled on scientific principles, but on which a section of the public who had not studied it in the scientific spirit were determined that their feelings should override science. Not being a doctor he would not pronounce as an expert, but he had no doubt that if scientific questions were to be decided by universal suffrage, only harm could be done to this suffrage, while it would be absolute ruin to science. If science is wrong, he said, it could only be got right and turned into the direction of truth by giving it free play outside altogether the influence of popular forces. The idea that a section of the public had an opinion worth having on such subjects was to him absurd.

The elections at the Royal College of Surgeons took place on Thursday (5th).

Messrs. Howard Marsh and Reginald Harrison were re-elected, and the third vacancy was filled by the election of Mr. James Hardie, of Manchester. The provin-

cial Fellows have, therefore, again succeeded in placing one of their number on the Council.

Sir George Humphry has continued to improve, and is now able to take carriage exercise.

The apothecaries' company has issued a calendar, and an interesting document it is, showing that it has done good work for the profession in the past.

LONDON, July 21, 1894.

UNEASINESS is felt in many quarters at the recrudescence of cholera on the continent, which is becoming in some countries serious. About two hundred attacks a day in St. Petersburg, and outbreaks much nearer our shores are certainly enough to make sanitary authorities anxious. The local government board has issued a circular urging the utmost vigilance as to all suspicious cases and promising favorable considerations to any proposals to add diarrhœa to the list of notifiable diseases for the remainder of the current quarter, after which the danger may be considered over for this year. In former epidemics the disease has been more fatal in the second year of its invasion, and many are accordingly asking each other whether we are now in the second year, or whether the cases last year were only stray ones, brought by ships and infecting a few persons in communication with them. If so the present may prove to be the first year of an invasion should it pass our boundaries. If otherwise, and last year is to be reckoned as the first of an epidemic, the seeds, so to say, of the disease have been sown sufficiently broadcast to cause anxiety. Our sanitarians speak confidently of our preparedness, though they admit the existence of weak spots in our armor, and if once an epidemic gains a footing there are many inland towns and villages but ill prepared to meet it.

Above £42,000 has already been received for the Hospital Sunday fund, and this is nearly £3,000 more than last year's collection, while other sums have yet to come in. Much credit is due to the *Lancet* for the spirited way in which it has contributed to the success of the fund. I am, therefore, rather sorry to notice that your powerful contemporary seems inclined to consider the management of the fund immaculate and endeavors to account for the discontent that has been evinced in a manner that facts will scarcely support. "Bad management" is the excuse put forward for refusing to include some institutions in the distribution. The truth is, in some cases, the so unfairly stigmatized management is the expense of each patient, especially in dispensaries and out-patient special institutions. These expenses consist largely in the use of drugs and appliances which the specialists say cure the patients and which, being costly, are not much used at great hospitals where patients are hurriedly got through in a few seconds each. I know that in some cases this contention is not without foundation. The supporters of the fund are apt to be angry too, when a sermon is preached on behalf of some institution selected by the preacher or his people, and when boxes are distributed to collect for such charity. Now it is really the management of the fund that has led to this action. The large hospitals, which, of course have the first claim, have their friends on the committee and very scant justice has been done to small, especially special hospitals. The prejudice against specialism has been fostered by the fund committee and their officials do not hesitate to express it. What more natural than that a preacher interested in a special hospital, knowing its working, and perhaps taking part in its management, should say, if you refuse to include this charity in your list I will give my collection to it alone? This kind of thing will increase if lay officials are to reflect the prejudices of a party. In the interest of hospitals I deprecate such divisions, although I am not quite sure that they may not eventually prevail and do good. For, after all, what is £40,000 for the rich metropolis to raise?

The committee appointed to investigate the charges brought by the medical officer of health (Dr. Louis Parkes) against the Chelsea Hospital for Women has issued its report. They say it was the duty of Dr. Parkes to notice the matter, but they do not understand why he omitted to inform the vestry that at the time he presented his report the hospital had been empty for three weeks, and that he had received a letter from the secretary stating that the works would be carried out as soon as possible and completed before patients were again admitted. They further state their opinion that a large number of the deaths were due to septicæmia, and that septic temperatures did not prevail in the practice of every member of the staff. This seems to me rather a lame conclusion or else an insinuation, unjustifiable unless supported by facts, in which case it should have been plainly stated. The medical officer of health attributed the mortality to insanitary conditions. The committee of inquiry offers no conclusion on this point, which is a vital one.

The occasion of the birth of a son to the Duke of York has been taken by the Queen to confer a baronetcy on the physician-accoucheur—Dr. John Williams—who has also attended other members of the royal family, and is one of our most eminent obstetricians.

The fellows of the College of Surgeons have held their meeting and congratulated the council on its concessions. The two societies almost approached each other and the sooner their rivalry disappears the better. There was no room for the latest of the two, but the matter only concerns the exclusive fellows. The council has issued a series of regulations for the meetings of members. They are admirably adapted to prevent these members from doing anything except at the council's bidding.

The constitution of the college needs radical reform.

The slight changes granted to the fellows induces them to ask to have them embodied in a new charter. If the members do not obtain some recognition in any such proposed instrument, they should combine to oppose it, and the privy council would no doubt accord them a hearing before recommending the grant of the charter.

THE PATENT MEDICINE SCOURGE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The sad death of the young woman, Natalie D——, which recently occurred in Montreal, should serve as a warning to the public, and stimulate the medical profession to enter a vigorous protest against the patent medicine scourge which is now raging throughout this continent. At the inquest, held on the body of the deceased, the coroner read a few letters from some women asking for these pills which the deceased had taken for the purpose of procuring abortion. He stated that he produced these letters to show what great evils such articles could do.

Your readers are only too well aware that the advertising columns of almost every daily and weekly newspaper —and also of magazines, almanacs, and pamphlets—contain glowing descriptions of the "miracles" which have been performed by Dr. So-and so's pills, or some one else's marvellous medical "discovery." Surely it is time that the medical profession stepped in, and, *una voce*, urged the proper authorities to place more stringent regulations on the sale of dangerous and poisonous preparations. We have only to glance through the advertising columns of reputable publications, and we shall find the narrative of some unfortunate sufferer, who pathetically relates how he or she has been snatched from the very jaws of death, after having unsuccessfully consulted (?) all "the leading physicians" in that particular section of the country. As a rule, a crude portrait of some vigorous looking individual adorns the account in order to render the narrative the more attractive, and the more effectually to catch the public eye. I believe it was the late Lord Chief Justice Coleridge (England), who stated that a country was composed of so many millions of people principally consisting of persons possessing a naturally dwarfed intelligence; and no more satisfactory

evidence of this can be afforded than the fact that a patent medicine speculator has only to advertise a new and startling "discovery," and he will immediately receive numerous testimonials extolling his remedy, and thanking God that such a benefactor to the human race has suddenly sprung into existence. It is surprising to find how large a number of persons consult physicians nowadays who frankly confess that they have been habitually using a certain much-lauded pill, or some other compound, which has probably been purchased at a neighboring general store; and only as a final resort have the purchasers been at length compelled to seek medical advice; nor can it be disputed that thousands of women annually imperil their lives by employing dangerous patent medicines for escaping the consequences of marriage, or to avert the trouble arising from illicit sexual union.

The time has arrived when both the medical profession and the public should be protected from a traffic which is hurtful to the community and is slowly undermining the practices of qualified medical men. It is almost unnecessary to point out that no case can be successfully treated unless the whole history, symptoms, and environment of that particular case be properly studied and understood. Furthermore it is a lamentable fact that, in all likelihood, many lives are lost which may be directly attributable to the reckless use of some obscure concoction entirely unsuitable to the disease for which it is administered. It is readily conceivable that, among the many thousands who purchase popular nostrums, and rely solely upon their supposed curative powers, not a few go from bad to worse; and only when too late do they hasten to seek sound, practical, and judicious counsel from an intelligent medical practitioner.

R. H. Phillimore, M.D.

Cookshire, Quebec, Canada,
July 23, 1894.

POLITZER'S OPINION ON MEDICAL EDUCATION IN AMERICA.

To the Editor of the Medical Record.

Sir: The article in a recent issue under the heading "Is there a Need for more Medical Schools?" recalls to mind an interesting lecture which was delivered before the Medical Society of Vienna, by Professor Politzer, in March last.

The meeting was open to all physicians, and many Americans, including myself, took advantage of it.

Professor Politzer, it seems, was sent by the Austrian Government to the United States to investigate the medical institutions, hospitals, and surgical and medical apparatuses.

What he said regarding our medical institutions was certainly displeasing to the Americans; nevertheless, it was true. He said that the United States, with a population of sixty or sixty-five millions, had one hundred and forty-eight medical schools, while the total number of medical schools in Austria and Germany together was twenty nine. Russia, with a population of about one hundred millions, had nine medical schools.

He also mentioned other European countries with a similar ratio. Regarding the formation of medical colleges in the United States, he said that all that was required to organize a college was a few doctors and an appeal to the Legislature for a charter, which was always granted. This remark was greeted with considerable laughter.

He said that almost every city of any considerable size had one college, some two—and that new ones were springing up every day—and that occasionally one dropped out of existence. Some of our schools gave degrees in two years, but he was glad to find that some of the better schools had increased the time to four years. In Austria and Germany a five-and-a-half years' course is required. Our hospitals and surgical instruments he praised very highly.

Oliver A. Blumenthal, M.D.

601 Warren Street, Syracuse, N. Y.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 4, 1894.

	Cases.	Deaths.
Tuberculosis	85	91
Typhoid fever	21	7
Scarlet fever	40	5
Cerebro-spinal meningitis	2	7
Measles	27	5
Diphtheria	146	37
Small-pox	6	1

The Late President of the French Republic and his Surgeons.—The *Progrès Médical* of June 30th gives, on the authority of Professor Poncet, of Lyons, the following details as to the surgical treatment pursued in the case of the late President of the French Republic. The wound was inflicted at a quarter past nine in the evening, and M. Poncet, who was at once summoned, found M. Carnot in a state of collapse, and with the aspect of one at the point of death. Tearing open the shirt and underclothing, M. Poncet found to the right of the line a alba, about three centimetres from the ensiform cartilage, parallel to the edge of the false ribs, a wound from twenty to twenty-five millimetres in length, from which black blood was oozing. He contented himself in the first instance with applying a handkerchief lightly to the wound, and with the view of preventing fatal syncope, he placed the President as nearly in a horizontal position as the carriage would allow, and strove to rouse him by speaking to him and occasionally tapping his face with his fingers. On the way to the Prefecture, distant about one kilometre, the President, who was unconscious, retched two or three times, but did not vomit. On arriving at the Prefecture he was laid on the bed with his head low, and while waiting for aseptic instruments M. Poncet applied iced compresses to the abdomen. A few minutes later, considering surgical interference to be urgently necessary, he, with the help of Drs. Masson, Monnoyer, Demandre, and Lépine, and in the presence of Professor Gailleton, Mayor of Lyons, and Drs. Kelsch, Albert, Fabre, and Rebatel, performed a local laparotomy, no anæsthetic being given on account of the collapsed state of the patient. An incision of ten to twelve centimetres was made and progressively extended as the necessity arose; this incision was a prolongation of the wound made by the assassin's dagger. A considerable quantity of blood escaped, and M. Poncet, introducing his left forefinger into the depth of the wound, was able clearly to make out on the anterior surface of the left lobe of the liver, near the suspensory ligament, a wound of the same dimensions as that in the skin. Separating the edges of the wound with forceps he saw, a little above the costal arch, the wound in the liver, into which the forefinger penetrated to a depth of two to three centimetres. Such rapid examination as was possible failed to reveal any lesion of the gall-bladder, stomach, intestine, etc. At this stage of the operation Professor Ollier arrived, and M. Poncet having shown him the nature of the wound, and the impossibility of suturing the wound in the liver—a procedure, moreover, which appeared to be useless in view of the fact that the bleeding could at once be stopped by pressure—it was agreed, having regard to the collapsed state of the patient, simply to plug the wound. Some fibres of the rectus, which interfered with the manipulations, were divided by another incision of five to six centimetres inward toward the middle line. The wound was plugged with iodoform gauze; then compresses of sterilized gauze were applied and fixed in place by a body bandage drawn moderately tight, while an assistant kept up slight pressure with his hand. At the beginning of the operation, when the first

incision was made, the President recovered consciousness, and said in a clear voice, "Oh! doctor, how you hurt me." From that time he seemed to recover strength a little and answered questions with perfect distinctness. He was given small pieces of ice and a little iced champagne, and two subcutaneous injections of a gramme of ether were administered at an interval of twenty to thirty minutes. The President complained of a certain difficulty in breathing and of pain in the stomach and loins. At half-past twelve his voice was still resonant, and he expressed his gratitude for what was being done for him. A minute or two later there was some return of the hemorrhage, and convulsive movements occurred which caused the intestine to show a tendency to protrude through the wound. At thirty-eight minutes past twelve he died.—*British Medical Journal.*

The Anti diphtherin of Klebs.—Dr. Oscar Vulpius applies the liquid with a long-handled camel's-hair brush, which is readily managed, first to the tonsils and soft palate, and, after thorough cleansing, to the pharynx. With restless children one must be content with imperfect treatment, and even with one application; even the liquid may be expelled by vomiting before, indeed, it can reach the membrane. The results as noted include a marked subsidence of the fever; the membrane may remain entirely unchanged during the treatment, nor, indeed, does this treatment prevent the tendency of the process to invade the trachea and bronchial tubes, consequently it has no influence in preventing croup. However, as it is important that the remedy shall be brought into close contact with the diseased surface, it should be again applied as soon as the membrane is coughed up. In his series of cases, nineteen in number, the percentage of deaths was 52.6; omitting one case of the rare accident, late secondary hemorrhage after tracheotomy, the rate falls to fifty per cent. Whether with an improved anti-diphtherin, or with possibly a combination with this of a diplococcus poison, better results may be obtained, the future only will determine.—*Deutsche medicinische Wochenschrift*, 1894, No. 6, S. 127.

Thyroid Feeding in Myxœdema.—Dr. S. J. Meltzer reports in the *New Yorker medicinische Monatsschrift*, No. 4, 1894, an interesting case of myxœdema in a woman, thirty-seven years of age, successfully treated with powdered thyroid extract. At the time of the report the improvement, as shown by photographs, was most marked, and there was every reason to anticipate a complete recovery.

Some Ancient Theses for the Degree of M.D. Paris.—M. Jules Roger, in his interesting book, "Médecins, Chirurgiens, et Barbiers," gives the following list of subjects of theses sustained in old times before this faculty: 1572. La nécessité de la mort est elle innée? 1576. Le fœtus, ressemble-t-il plus à la mère qu'au père? 1589. L'air est il plus nécessaire que la nourriture et la boisson? 1622 L'eau est-elle plus salutaire que le vin? 1639. Doit-on saigner une jeune fille folle d'amour? 1643. S'enivrer une fois par mois est-il salutaire? 1646. La femme est-elle un ouvrage imparfait de la nature? 1662. Le libertinage amène-t-il la calvitie? 1668. Les Pari siens sont ils sujets à la toux quand souffle le vent du nord? 1714. Quel est le plus salutaire, de l'eau pure, du vin pur, ou du vin mélangé d'eau? 1745. Les littérateurs doivent-ils se marier? The *naïveté* of the preceding questions is charming, but he must have been a courageous man who, even in 1646, could gravely ask the question, "Is woman an imperfect work of nature?"—*British Medical Journal.*

Cancer Houses.—Several correspondents of the *British Medical Journal* have reported instances in which the successive occupants of certain houses have died of cancer. In many cases there was no history of heredity, and often there was no relationship between the persons successively attacked with the disease.

A Convivial Occasion.—The doctors of the Gironde dined together on Sunday, June 17th, at Pauillac, and the banquet was, according to the *Echo*, moistened by 218 *crus* and 340 varieties of wine. The *carte* was in twelve pages, setting forth in elegant typography the virtues of the most reputed *crus* and the most famous years. There were 1,400 bottles to 170 doctors. This goes ahead of the annual banquets of the Maine State Medical Society.

Lucky Numbers and Lucky Medical Students.—Two French medical students, M. Gustave Lefilliatre and M. Georges Labey, had recently a letter from a solicitor named Leger, of Marines, Seine-et-Oise, stating that the late Dr. Dubois, a medical man at Chars, had left a will by which he bequeathed all his surgical and medical appliances, free of legacy duty, to two students obtaining their degree at the examination next after the decease of the testator. The two students selected were to be those who came out No. 14 and No. 84 in the list. At first it was thought the letter was a hoax, but the two young men went to the place indicated, and were there duly presented with an exceptionally fine collection of instruments and accessories of all kinds for division between them. They learned that their being specially chosen was due to the fact that the deceased doctor had twice passed an examination, and that he had on those occasions been No. 14 and No. 84 on the lists.

Professor Gussenbauer, the newly appointed incumbent of the Chair of Surgery in the University of Vienna has been elected President of the Twenty-fourth Congress of the German Society of Surgery to be held in 1895.

Profitable Quackery in Russia.—The police in Kieff recently made a domiciliary visit to the proprietor of some "magic pills," a former blacksmith in Warsaw. In searching his effects they found 3,782 letters containing orders for pills, with enclosures amounting in all to over $5,000. The letters were from persons of all classes, including priests, apothecaries, and government officials.

Sanitation Sunday.—We have labor day and hospital Sunday, and other interesting memorial occasions, but the English churchman goes ahead of the record and proposes a "Sanitary Sunday." The Church Sanitary Association suggests that the seventh Sunday after Trinity be known as Sanitation Sunday, because the gospel for this day contains the record of Christ's disciples distributing wholesome food to those who were already in the enjoyment of fresh air, pure water, and abundant light, thereby indicating the Divine will that man shall enjoy fulness "as well for the body as the soul."

Instruction in Dentistry in France.—In the French Budget for 1895 is an appropriation of $15,000 to provide for the organization of chairs of dental surgery in several of the medical schools of the country.

Contract Medical Practice.—The London (Ont.) Medical Society has been deliberating on the question of contract or lodge practice, and offers the following suggestions looking to its abolition or restriction: "1. Apply for legislative authority to prohibit contract practice. With the prevailing contract rates at $1.00 and $1.50 per member, this prohibition might be shown to be in the interest of the public as well as the profession, inasmuch as indifferent service is a natural result of inadequate remuneration; or, 2. Apply for legislative power to fix a minimum tariff of contract rates. A Toronto medical journal, in December, 1893, claims, on the authority of a distinguished actuary, that the proper remuneration for contract practice in Canada is $4.00 a year per member; or, 3. Apply to the Legislature for power to frame and enforce a code of medical ethics, with a view to control the evil; or, 4. Address an appeal to every registered practitioner to discountenance the system. The influence of such an appeal coming from the representative body of the profession would tend to bring the practice into disrepute."

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Original Articles.

ANATOMY OF CLUB-FOOT.

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NEW YORK.

In the *Annals of Surgery* of March, 1894, will be found an article written by the author of this paper, entitled "The Operative Treatment of Club foot," in which the records of twenty six cases operated upon from 1886 to 1893 were detailed. It was recommended in that article that in the minor cases, before the thirtieth month of life, mechanical fixation with or without tenotomies and fasciotomies were sufficient. After that age in the child, tenotomies and fasciotomies were to be combined with a talus extirpation in all cases where the equinus was the prominent deformity and the varus slight, provided the tenotomies and fasciotomies had not completely reduced the deformity.

In those cases where, in addition to the equinus, the varus was marked, a limited cuneiform osteotomy involving only the processus anterior calcanei and the articular surface of the cuboid, was to be added, if necessary.

In the adult, after the usual tenotomies and fasciotomies, a cuneiform osteotomy involving parts of the os calcis, cuboid, neck of talus and scaphoid, was recommended if the equinus was relieved after tenotomy. If the equinus was not thus relieved, either a partial or total talus extirpation was to be combined with a cuneiform osteotomy at Chopart's joint. It was also stated that the severest forms of club foot (inveterate cases) were only cured by both of these procedures. To-night I wish to give the results of a dissection of two feet which represent perfectly the highest degree of this deformity, and, in my opinion, substantiate the view taken in so far as the inveterate cases are concerned.

This specimen represents a club foot of congenital origin and of twenty-two years' standing, in which the rotation inward of the leg is marked, and the position of extreme supinative plantar flexion and adduction is present in the foot.

The movements of the joint surfaces were all limited. In the talo-crural joint, the movement was confined to a simple gliding in which the antero-posterior was less marked than the lateral motion. In the talo-calcanean joint scarcely any movement was appreciated. In Chopart's joint a movement corresponding to flexion and extension was more marked than in the other joints. In none of the joints was there more than a gliding movement in one or more planes. These movements produced only a limited change in the relations of the different bones of the foot to one another or to the leg. The bursæ found consisted: 1, Of a large multilocular cavity covering bearing points of pressure which are sure to be the anterior process of the calcaneus and the dorso lateral surface of the cuboideus; 2, of a smaller multilocular bursa covering the neck of the talus and the lower portion of the external malleolus. The ligaments were not peculiar nor of interest. On the external border of the foot a large amount of fibrous tissue was present, and many new bands of this tissue seemed to be added to the normal ligaments. Upon the inner border and sole of the foot the fibrous tissue was not so extensively developed, although the plantar ligaments were well marked, thick, and out of all proportion relatively to the muscular tissue. The anterior annular ligament was well developed, thick, and strong. The external annular ligament consisted of a firm broad band covering the peroneal tendons as they passed to the posterior surface of the calcaneus. The internal annular ligament was well marked but very short, on account of the position of the foot. The muscles, which in the leg and foot show a marked atrophy with fatty and connective-tissue transformation, had the following relations, which were peculiar:

1. The tibialis anticus passed over the lower third of the tibia, from without inward, to the inner surface of the internal malleolus, whence it descended to its insertion.

2. The extensor proprius pollicis passed through a separate compartment of the annular ligament over the

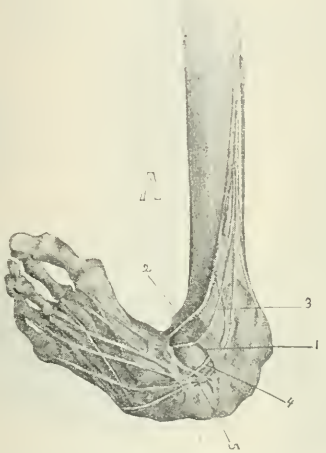

FIG. 1.—ANTERIOR VIEW: 1, Anterior annular ligament; 2, tibialis anticus; 3, extensor hallucis; 4, extensor longus digitorum; 5, peroneus tertius.

inner surface of the internal malleolus, close to and in front of the tibialis anticus. It divided into two tendons which were inserted into the second phalanx.

3. The extensor longus digitorum passed over the outer third of the anterior surface of the tibia, in a groove bounded by two well marked prominences. It was covered by the annular ligament. It divided into four tendons, which passed obliquely inward over the heads of the first and second metatarsal bones to the four toes.

4. The peroneus tertius passed obliquely outward to the base of the fifth metatarsal bone over the cuneiform bones.

5. The extensor brevis digitorum is scarcely observable except for its tendons.

6. The peroneus longus and brevis passed beneath a strong and narrow band of fascia, extending from the external malleus to the calcaneus, and representing the external annular ligament, around the external and posterior surface of the calcaneus (inferior surface) to their

insertions. The former did not touch the cuboid bone. It passed above the level of the anterior process of the calcaneus obliquely, directed from without downward and inward. The latter, after passing over the anterior process of the calcaneus, descended upon the lateral border of the cuboid bone to its insertion.

7. The tibialis posticus passed to the inner side of the internal malleolus, its posterior border, beneath it, and to its insertions.

8. The flexor longus digitorum passed to the outer side of the tibialis posticus, beneath the internal malleolus, to its insertion.

9. The flexor longus pollicis passed through a well-marked groove in the tibia, external to the flexor longus digitorum, beneath the internal malleolus, and was lost in the muscles of the foot.

The relations of the bones of the foot to one another

FIG. 2.—LATERAL VIEW: 1, External lateral ligament; 2, peroneus longus; 3, peroneus brevis; 4, tendo Achillis.

FIG. 3.—POSTERIOR VIEW: 1, Tendo Achillis; 2, peroneus longus; 3, peroneus brevis; 4, tibialis posticus and flexor longus digitorum; 5, flexor longus hallucis; 6, abductor minimi digiti.

and to those of the leg, were in general as follows: Most striking in this respect was the angle formed by the bones of the leg and the calcaneus. The position of the calcaneus was one of marked plantar flexion. Its long axis formed, with the articular surface of the tibia, an angle of 80°. If we consider the mid-position of the foot (talus or calcaneus) to the leg to be one of a right angle (90°), and allow 39° for the extreme of normal dorsal or plantar flexion, we have here 41° of a forced plantar flexion of the foot. Less striking, but no less important, is the supination of the calcaneus, which, when measured, shows an increase of 50° over the normal position of adult bone. There is a slight adduction of the calcaneus present, which amounted to about 10°.

On account of the forced plantar flexion, the supination and adduction, the superior articular surfaces are altered in their relative position to the talus, and to the tibia and fibula. Besides the articular surface for the talus, we have upon this surface, just in front of the tuberosity, nearthroses for both the tibia and fibula. That for the former is continuous with the external third of the articular surface

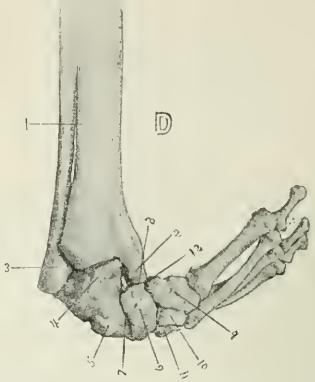

FIG. 4.—ANTERIOR VIEW: 1, Tibia; 2, internal malleolus with nearthrosis between it and scaphoid and internal cuneiform; 3, external malleolus articulation with talus; 4, talus—body; 5, neck of talus—inward angle, downward angle, 90°; 6, navicular bone; 7, talo-navicular articulation, situated entirely upon the inner side of neck; 8, nearthrosis between internal malleolus and navicular bone; 9, internal cuneiform; 10, middle cuneiform; 11, external cuneiform. 12, nearthrosis between internal cuneiform and internal malleolus.

for the talus, and is situated upon the superior surface (really internal). That for the latter is situated upon the external surface (really superior).

The processus anterior of the calcaneus is large and prominent. It sustains the greater portion of the weight

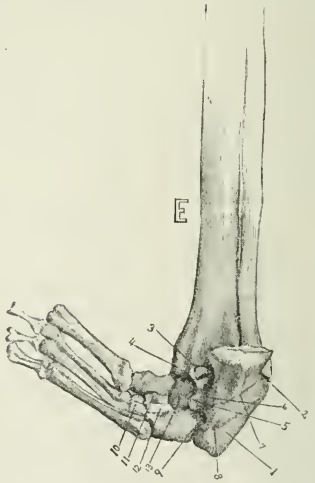

FIG. 5.—POSTERIOR VIEW: 1, Calcaneus; 2, nearthrosis between external malleolus and calcaneus just in front of the tuberosity and internal to nearthrosis between calcaneus and external malleolus, concealed from view here, is the nearthrosis between the tibia and calcaneus; 3, talus, all that can be seen from this view; 4, internal malleolus, articulating with the talus but with the navicular and internal cuneiform by nearthrosis; 5, sustentaculum tali, maintaining articulations by nearthrosis with the navicular bone; 6, internal surface of calcaneus; 7, 8, mark the relations of peroneus longus and brevis; 9, articulations of cuboid with inner surface of sustentaculum tali; 10, 11, 12, cuneiform bones; 13, navicular bone.

of the body. Situated upon the internal surface of the neck of the calcaneus is the articulation for the cuboid.

The talus is situated in the angle formed by the bones of the leg and the calcaneus. Its superior surface articulates with the tibia, and is external so far posterior as to

be continuous with the inferior articular surface in its outer half, and only separated from the internal half of the same surface by a 5 mm. strip of non-articular bone.

The shape of the body is triangular with the apex posterior, and with the superior and inferior surfaces looking respectively upward and downward and backward.

The neck of the talus forms with the body an angle of 45° for the inward displacement, and of 90° for the downward displacement.

The outer angle of the neck is less prominent than the internal. Upon the internal surface of the neck is an oval facet for articulation with the navicular bone, the long axis of which is placed at an angle of 45° to the long axis of the neck.

The navicular bone articulates with the neck of the talus only in the external portion of its posterior surface, while the internal portion of the same surface is non-articular and is bent sharply upon the outer segment.

The long axis of the navicular bone (*i.e.*, transverse) is nearly parallel with that of the neck of the talus.

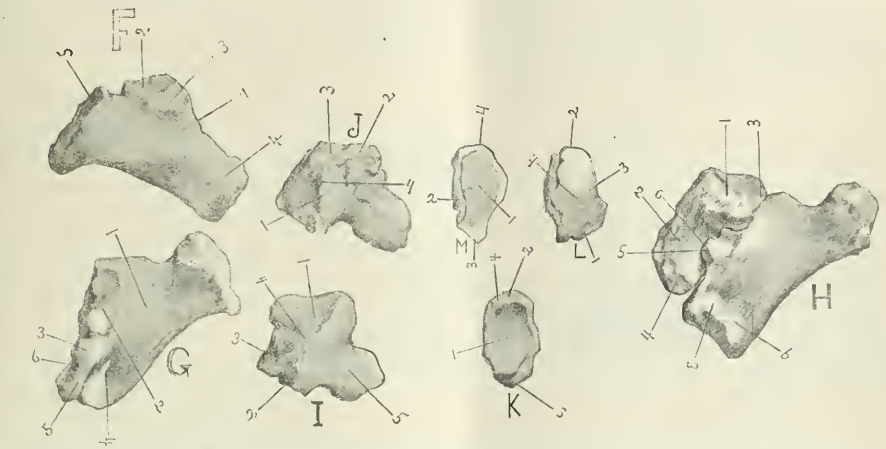

FIG. 6.—F. CALCANEUS.—1, External surface; 2, nearthrosis for external malleolus, just internal to it is the nearthrosis for tibia (concealed here); 3, articular surface (external) for talus, the posterior portion of this surface articulates with the tibia; 4, processus anterior calcanei; 5, tuberosity. G. 1, Internal surface; 2, internal portion of articulation for the talus, the superior border of which is continuous with the surface seen F 3; 3, sustentaculum tali; 4, articulation for cuboid; 5, marked ridge of bone continuous with the sustentaculum overhanging and articulating with the cuboid at posterior internal angle; 6, non articular superior surface of neck, covered by neck of talus.

H. TALUS AND CALCANEUS—INTERNAL SURFACES.—1, Body of talus triangular in shape; 2, neck of talus; 3, point at which superior and inferior surfaces are continuous; 4, articulation for navicular bone; 5, sustentaculum tali; 7, nearthrosis with neck of talus; 8, 9, articulations for cuboid.

I. TALUS—ANTERIOR AND SUPERIOR VIEW.—1, Super-articular surface for tibia; 2, articular surface for fibula; 3, non-articular surface for fibrous bands between two articular surfaces of the fibula uniting the fibula and talus; 4, body of talus; 5, neck of talus ninety degrees downward, forty-five degrees inward.

J. INFERIOR AND EXTERNAL VIEW.—1, Inferior articular surface for calcaneus; 2, articular surface for fibula; 3, non-articular surface for fibrous bands to fibula; 4, tibia articular surface.

K. NAVICULAR BONE—POSTERIOR VIEW: 1, Oval articular surface for articulation with inner surface of the neck of the talus; 2, internal border; 3, external border; 4, second tuberosity, place where it ought to be.

L. SUPERIOR VIEW.—1, External border; 2, internal border; 3, posterior border; 4, superior surface.

M. ANTERIOR AND INFERIOR VIEW.—1, Anterior surface of cuneiform bone; 2, inferior surface very narrow as compared with the superior surface in L. 4; 3, internal border; 4, external border.

This bone presents two nearthroses. One for the anterior surface of the sustentaculum tali; the other for the internal malleolus at its anterior and inferior angle.

The superior surface (anterior) is broad. The inferior is narrow. The external is narrower than the internal. There is no tuberosity present, nor does this bone articulate with the cuboid. The transverse axis forms with the transverse axis of the cuboid an angle of ninety degrees.

The cuboid bone articulates with the anterior process (*i.e.*, neck) of the calcaneus upon its internal surface, in such a manner that the weight of the body is in part sustained by the dorso lateral surface. There is no sulcus for the peroneus longus tendon, nor is the tuberosity present. The three cuneiform bones articulate with the navicular and cuboid in the angle formed by them. Their position is one of marked supination, adduction, and approximation of the inner and outer bones toward the plantar surface. This approximation diminishes gradually as one passes beyond to the metatarsal and phalangeal bones. Considering these bones more carefully, we find that the talus is made up of a body and a neck. The body is triangular in shape, with its apex posteriorly. The superior articular surface looks directly upward, and is continuous along the outer half with the inferior articular surface at the posterior border, while along the inner half this surface is separated from the inferior by a 5 mm. strip of non-articular bone. The inferior articular surface is directed downward and backward. The outer half is convex, and is directed outward. The inner half is concave, and is directed slightly inward. The facet for the internal malleolus situated nearer the anterior than the posterior surface of the body is broad, flat, and continuous with the superior articular surface. The facet for the external malleolus, situated near the posterior surface of the body, is narrow and is separated from the superior articular surface by a strip of non-articular bone. Just in front of the inferior articular surface is a very small articular facet for the anterior and superior surface of the sustentaculum tali. Upon the inner side of the neck of the talus is situated the articular facet for the navicular bone. The facet is oval in shape, and its long axis forms with the long axis of the neck an angle of forty-five degrees. The outer and anterior angle of the neck is much less prominent than the internal and anterior angle. It seems to be cut away. It is more rounded. The neck itself is somewhat flattened from above downward, and is rounded from side to side. The long axis of the neck forms with the antero-posterior axis of the body an angle of ninety degrees and with the transverse axis an angle of forty-five degrees.

Calcaneus: The position of this bone is first one of nearly full extension (plantar flexion). It forms with the tibia an angle of eighty degrees. It is also supinated sixty degrees, so that the nearthrosis for the fibula is situated upon the superior and external border, and that for the talus upon the inner surface adjoining the nearthrosis for the fibula. The bone is also adducted ten degrees.

Upon the superior surface we have four articular surfaces for the talus, tibia, and fibula. In the position in which the bone articulates these surfaces look upward in general. The articulation for the fibula looks upward,

outward, and slightly forward. Just in front of the tuberosity is also a plane articular surface looking upward and inward, for articulation with the outer third of the posterior border of the tibia. This surface is continuous with the outer portion of the articular surface for the talus. These two surfaces are nearthroses. Anterior and internal to them is the articulation for the talus, which is inclined outward for the outer half, inward for the inner half. It is concavo convex, with its long axis from without downward, forward, and inward. It extends so far forward as to be closely applied to the articulation for the cuboid. The sustentaculum tali is rudimentary, placed at a very low level upon the inner side of the bone, and articulates with the talus and navicular bone. The processus anterior is enlarged both in heighth and breadth. The body and neck, including the processus anterior, present a marked concavity upon the internal surface, which is increased in appearance by the enlarged tuber calcanei and anterior process.

The articular surface for the cuboid is entirely upon the inner side of the processus anterior, with its long axis at right angles to that of the calcaneus. This surface is oval in shape and is composed of two portions: The lower for articulation with post and external angle of the cuboid; the upper, which is situated just beneath and anterior to the sustentaculum tali, for articulation with the posterior and internal angle of the cuboid.

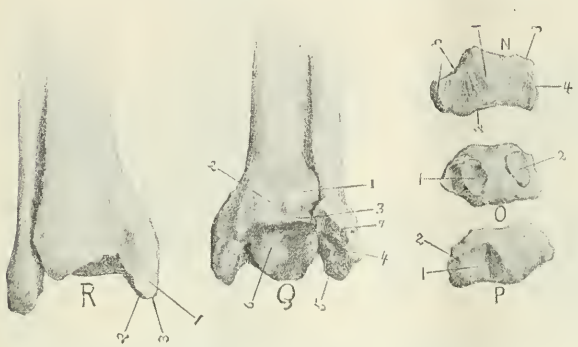

Fig. 7.—N. Cuboid.—1, Inferior surface; 2, interior border; 3, exterior border; 4, anterior surface; 5, articulation with calcaneus.

O. Anterior and Internal Surface.—1, Anterior surface; 2, internal surface with articulum for cuneiform. P.—1, Posterior surface composed of two surfaces, the one external or inferior marked for the calcaneus, the other, marked 2, at the posterior internal angle for calcaneus insertion of sustentaculum tali.

Q. Tibia and Fibula, Posterior View.—1, Groove marked for tibialis posterior and flexor longus digitorum; 2, groove for flexor longus pollicis; 3, articular surface for calcaneus; non-articular surface for fibrous bands attaching the fibula to calcaneus and talus; 6, posterior border of inferior tibial articular surface with articular surface for calcaneus; 7, articular nearthroses between.

R. Fibular Calcaneus—Anterior of Same.—1, Internal malleolus; 2, facet for articulation with navicular bone; 3, outer border of facet for articulation with cuneiform bone.

The internal border is narrower from above downward and longer from before backward than is usually the case. The tuberosity is wanting.

The anterior and posterior articular surfaces approach one another inferiorly. The posterior surface is concave and encroaches upon the external aspect of the bone, leaving a surface upon the inner posterior (posterior surface) free from cartilage. The cuneiform articular surfaces (anterior surface), besides being inclined inferiorly, are slightly displaced toward the external border. The bone is therefore more triangular in shape in two directions, *i.e.*, toward the planta pedis and the external border. There is no articulation with the cuboid bone. The long axis of the navicular bone is parallel to the long axis of the neck of talus. The nearthroses present exist between the internal border and the malleolus, between the sustentaculum tali and the inferior surface near the posterior border, and with the talus at the junction of its body and neck.

The cuboid bone is more quadrilateral than is normally the case. In new bone and in the adult cuboid, between the outer and inner border is respectively fifty per cent. and fifty seven per cent. In our club foot, however, this relation is raised to sixty six per cent., which is in part due to the lessened oblique position of anterior articular surface. This articular surface forms with the external border in the new born cuboid an angle of 72°, in the adult 79°. In our specimen it is 82°. The tuberosity of the cuboid is wanting, so that the height of the bone, especially at its posterior border, seems deficient. There is no articular surface for the navicular bone.

The posterior articular surface occupies more of the external surface than usual. This concavo convex looks backward and slightly outward, and is continuous with a nearthrosis upon the posterior and internal angle for articulation with the calcaneus just beneath and anterior to the sustentaculum tali.

The articular surface for the external cuneiform bone is well marked, occupying nearly one fourth of the inner side. It is raised above the surrounding surface with its articular face directed downward and backward, but in the articulated bone backward and upward.

The cuneiform bones are arranged rather behind than alongside one another. Their posterior surfaces are obliquely inclined, so that they look backward and upward, *i e.*, the lower border projects further backward than the upper border. Otherwise these bones present few changes of importance.

In the metatarsal bones the rotation of the diaphysis inward 90°, and greater development of the posterior surface upon the internal than posterior surface, are the only noticeable features.

The tibia and the fibula are rotated inward about their long axis. The malleolus externus is anterior to the malleolus internus. The transverse axis of the talo crural joint is from in front and externally to behind and internally; with the transverse axis of the body these axes form an angle of 30°.

Upon the fibular end, two articular surfaces are found, one for the talus and one for the calcaneus (a nearthrosis). These are separated by a non articular surface. Upon the tibial end three articular surfaces are found, one for the talus, one for the scaphoid, and one for the internal cunei form. The two latter are nearthroses.

In the club foot of the new-born, the neck of the talus is not only increased in length, but its downward and inward inclination is respectively 45° and 65°—against 15° and 45° in the normal newborn talus. This inclination of the neck accounts for the plantar flexion, according to Hueter.

Kocher, however, does not entirely agree with him in this view, since the talo-crural joint is in plantar flexion, as shown by the displacement of the superior articular surface backward and the meniscus found at the posterior border of this joint.[1]

The angle between the axis of the leg and the talus in calcaneus was one hundred and fifty degrees, as found by Kocher in the club-foot of a year old child. Plantar flexion is possible to one hundred and thirty degrees. This leaves twenty degrees of forced flexion in this case. In our specimen there is an angle of one hundred and seventy degrees present, so that we have forty-one degrees for a forced plantar flexion.

The articular surface for the navicular bone is entirely upon the inner side of the neck, oval in shape, with its long axis midway between the horizontal and vertical planes. In severe cases, the shape of this articular surface is rounded and its long axis is vertical. In our case this articulation has its long axis midway between a vertical and horizontal plane.

In the two cases examined by Kocher a great difference existed in the form of the neck. In the one year-old club foot the neck was abnormally long. In the

[1] Dissection by Kocher.

new-born club-foot the neck was only lengthened upon the outer side, in so far as the anterior end of the navicular articulation begins on the mesial side, while it is shortened upon the mesial side by the displacement of the articular surface. This difference in the length of the neck and the position of the talo-navicular facet is explained by Kocher as follows: "If in utero the pressure continues till birth, the growth of the neck is hindered and the anomaly consists in the displacement of the articular surface." After birth an unhindered growth takes place, because the opposing pressure of the navicular bone is reduced on account of the imperfect play of the muscles and their unfavorable position. If, however, the pressure is relieved in utero, the length of the neck is evident at birth."

The superior articular surface of the talus is displaced posteriorly, so that the cartilage approaches nearly to the posterior inferior border. It appears longer and narrower than is normally the case. In our specimen, this articular surface is continuous with the inferior articular surface in the outer half. The lateral articular surfaces are very unequally developed. The external is filled with fibrous tissue in the posterior portion, while its anterior part is pushed nearer the neck. The internal is very small. In this particular our specimen is similar.

In the calcaneus the changes are simply an excessive representation of the fœtal over the adult bone. The articular surface for the talus inclines onward and backward, and its highest point does not reach the highest point of the bone. Anteriorly, it extends close to the cuboid articular surface; such a position of the articular surface forms supination. The body of the calcaneus and the neck are of equal length. The processus anterior is greatly developed in height and is out of all comparison with that of the new-born. The long axis is so bent upon itself that a concavity exists upon the inner side, and the tuber calcanei and processus anterior appear strongly bent to the same side. The articulation for the cuboid is entirely upon the mesial side of the neck. This bend in the axis of the bone and the position of the cuboid articular facet produce great displacement of the fore-foot at Chopart's joint.

The sustentaculum tali is placed at a much deeper level, and is very imperfectly developed. In extreme cases it is wanting, since the supination of the foot prevents its growth from pressure upon the malleolus internus. The similarity between our specimen and the new-born club-foot is striking, except for the degree and the nearthrosis. In the navicular bone, the lateral border is narrower than normal, while the inner border is thicker. This change is ascribed to the freedom from pressure for the inner border, and to the plantar flexion and supination for the external border.

The anterior and posterior articular surfaces nearly touch upon the inferior surface. The cuneiform articular surfaces are displaced toward the mesial border, while the talus articular surface reaches less closely to the inner border than is normally the case. These changes are evidences of pressure in the sense of adduction. The navicular bone is consequently triangular in shape, being narrower externally and toward the planta pedis.

The tuberosity is wanting or rudimentary. The changes in the cuboid are not so constant nor marked as in the calcaneus. As before stated, the relation of the inner to the outer border in percentages is fifty degrees for the new-born and fifty seven for the adult (Arby) cuboid. In club-foot, however, the anterior and posterior articular surfaces converge less externally, and the bone is more quadrilateral. It is principally, however, the anterior surface which inclines less obliquely outward and backward. The tuberosities cuboidii which bound the posterior border of the sulcus for the peroneus longus are not developed, so that the vertical diameter is much diminished. The thickening of the bone behind the sulcus is scarcely noticeable. The tuberosity is not developed, as its relations to the tendon have been lost by the displacement of the tendon upon the calcaneus. The similarity between these two bones (*i.e.*, navicular and cuboid), in the new-born and in our specimen, are marked. The cuneiform bones are arranged behind rather than alongside one another. Their posterior surfaces incline obliquely backward. The tibia and fibula are less altered. They are rotated inward (most marked) in their lower third. The malleolus externus instead of being posterior is anterior, and the transverse axis of the joint runs from behind and internally outward and externally.

It is also interesting to note the new articular facets found in club foot. In the club-foot of the new-born child new articular facets (nearthroses) are developed. 1. On the mesial side of the malleolus internal is found an articular facet which articulates with a similar facet upon the mesial and superior surface of the navicular bone. This articulation is entirely separate from the talo-navicular joint, and against its capsule rests the tibialis posticus tendon as it ascends beneath the naviculare. 2. Between the internal malleolus (its inferior surface) and neck of the talus. 3. Between the malleolus externus and the calcaneus.

In our specimen the nearthroses are more numerous, and are as follows: 1. Between the posterior border of the tibia and the calcaneus. 2. Between the internal malleolus and the navicular. 3. Between the internal malleolus and the cuneiform (internal). 4. Between the external malleolus and the calcaneus. 5. Between the sustentaculum tali and the inferior surface of the navicular bone. 6. Between the navicular bone and the talus at the junction of the body and the neck. 7. Between the postero-internal border of the cuboid and the calcaneus beneath and anterior to the sustentaculum tali.

The tendons in club-foot of the new born vary as follows:

The flexor longus hallucis runs in a groove on the talus and tibia into the soft parts beneath the plantar fascia, without touching the calcaneus.

The peroneus longus runs from the malleolus externus over and beneath the calcaneus. It does not touch the cuboid bone. The tibialis posticus runs from the posterior surface of the tibia over the border of the malleolus internus. These changes in the position of the tendons existed also in our case, though their displacement was more marked than has been described in the club-foot of the new-born or child.

These changes in the shape of the bones, the displacement of the tendons, the approximation of the points of origin and insertion of the muscles, and the new articular facets, are sufficient evidences of a force exerted upon the foot in the sense of plantar flexion at the ankle-joint, and supination and adduction in the talo tarsal joint. This pressure, which is produced in utero, can be seen in the great majority of new born children, but in so mild a degree that walking alone is sufficient to produce enough formative and dorsal flexion to correct it.

Chondrification is complete by the seventh or eighth week of fœtal life. The articulations begin to be formed at this time, and are completed at the fourth month. Short and slight pressures within the joint, owing to the softness of the cartilaginous skeleton, and the rapidity of growth in the foot, cause from this time on deformities in the bones, and secondarily in the position of the tendons.

Since the abnormal positions take place before the use of, and at the time of, the formation of the muscles, rectification does not take place afterward, because the bones have become altered in shape and the muscular attachments are approximated.

The earlier in fœtal life such malpositions are initiated, the more pronounced will be the subsequent deformity.

After birth the muscles tend to maintain or increase an existing deformity. In the adult congenital club-foot, however, there is added another factor in the production and intensification of the deformity, namely, in the weight of the body in walking. These changes, so

far as this dissection has shown, consist: 1, In an excessive increase of the deformities found in the bones of the new-born. 2, In additional nearthroses. 3. In an increased plantar flexion at the talo-crural joint. 4. In a marked supination and adduction in the calcaneus. 5. In an extensive displacement of the navicular and cuboid bone to the mesial side of the talus and calcaneus. 6. In a pronounced rotation of the tibia and fibula.

A normal foot at rest is one in which the position is one of moderate supination, slight adduction with plantar flexion. The axis in such a foot runs in a frontal direction from right to left in the talo-crural joint, and the motions of flexion and extension take place upon the axis. Flexion is always accompanied here with slight adduction. All muscles before this axis are dorsal flexors (extensors). Those behind it are plantar flexors (flexors).

The mid-position is one in which the foot is at right angles to the leg, *i.e.*, ninety degrees. Dorsal and plantar flexion can be carried to thirty-nine degrees in addition. Pronation and supination occur between the talus and the foot, *i.e.*, the talus, the calcaneus, cuboid, and navicular bones. The axis of motion is, if continued forward and backward, through the calcaneus from behind, outside and below, anteriorly above and within, passing through the sustentaculum tali and the neck of the talus. On account of the direction of this axis we must consider it as made up of three axes: a sagittal, about which pronation and supination occur; a perpendicular, about which ab- and adduction occur; and a frontal, about which flexion and extension occur. With supination, adduction and plantar flexion take place. With pronation, abduction and dorsal flexion. The muscles situated externally to this axis are pronators, abductors, and dorsal flexors. Those situated internally are supinators, adductors, and plantar flexors. For this reason, the tendo Achillis lying behind the axes in the talo-crural joint and to the inner side of the axis of motion in the talo calcanean becomes a plantar flexor at the talo-crural and a supinator at the talo-calcanean. Hence all tendons situated behind and to the inner side of these joints cause, when shortened, first plantar flexion at the talo-crural, and subsequently plantar flexion, supination, and adduction in the talo-calcanean and navicular joints.

It must be remembered, however, that even the mid-position in the adult is attended with a slight supination in the talo-calcanean joint, and that in the new-born this supination is often quite pronounced. For this reason a greater frequency exists in all deformities tending to varus over calcaneus or calcaneo-valgus. Such supination in foot axis corrected by the simple mechanism of walking is overlooked as being a deformity, and only that degree is so classed in which supination is not corrected by walking. Leuffenbach, Hueter, and Adams have shown that this difference in the axes of motion in the foot of the new-born and that of the adult allows of a greater supination without an increased plantar flexion and adduction in the former, while in the latter greater pronation is allowed. In the new-born the special characteristics of the talus are increased length of the neck and its downward and inward direction, with an articular surface upon its inner side, the angles of displacement being 15° and 45°, respectively. The long axis of the articular surface is midway between a vertical and horizontal plane and is oval in shape, whereas in the adult this surface is in a transverse plane and is ovoid. This difference is due to the fact that the axis of talus in the child is nearer the axes of motion between the talus and calcaneus than in the adult, and hence the motion at the talo-tarsal joint is more extensive and the joint surface more rounded. In the calcaneus, the great length and heighth of the processus calcanei, the oblique inclination of the superior articular process to the inner side, and the deep position of the sustentaculum tali, are the principal features. The inclination of the superior articular process downward and inward mainly, and to a less extent outward, favors supination. The reverse is the case in the adult, where pronation is favored. In the new-born the length of the neck is equal to that of the body. In the adult it is only one-third to one half the length of the body, owing to the pressure of the cuboid bone in the pronated position. The sustentaculum tali is deeply placed and slightly developed. The reverse condition is present in the adult.

Very slight differences exist in the cuboid except in the length of their outer borders. In the new-born this is represented in per cent. as 50° of the inner border. In the adult it is 57°.

In the treatment of a congenital club foot it is necessary to reduce the plantar flexion, the supination, the displacement at Chopart's joint, and the rotation of the leg inward. This replacement of the foot must be done so that the normal axes of motion are restored as completely as is possible. This can be accomplished either by the development of new articular facets with perfect motion, or by the extirpation of bone and syndesmotic or anchylosed joints with less perfect motion. The important period of life for the accomplishment of a complete restoration of the foot with perfect motion is, strictly speaking, the first thirty months of life. During this period the growth of the foot is relatively greater than any other part of the lower extremity.

Mechanical force and at the most tenotomies and fasciotomies are sufficient to correct deformities at this time. After this period great reliance upon the development of new articular facets becomes less and less, and we must trust more and more to operative procedures, viz., tenotomies, fasciotomies, talus extirpations, and cuneiform osteotomies. Which of these operations we select, and the particular method by which we accomplish them, is to be decided by the kind of deformity, the degree, and the special peculiarity of the case. For the more pronounced deformities of early youth, where mechanical treatment, fasciotomies, and tenotomies have been unsuccessful, or where no treatment has been used, the talus extirpation alone, or with a very limited wedge between the os calcis and cuboid bone, or within the os calcis, allows a flexion of the foot to 90° at the talo-crural, a relief of the supination in the os calcis, and a reduction in the displacement at Chopart's joint. In the adult the question becomes one of the extent of the equinus over the varus, or whether they are both equally marked. If the equinus is the marked deformity, provided tenotomy has not allowed of its reduction, talus extirpation. If varus is the marked deformity and the equinus is relieved by tenotomy, cuneiform osteotomy at Chopart's joint. If both are equally involved in the production, talus extirpation and cuneiform osteotomy. It should be the aim of the operator to relieve the deformity completely and at once. No apparatus, except possibly a high-soled shoe, is required when this is accomplished. No one would think of resorting to osteotomy or extirpation of the talus as a primary operation in the growing foot. It is enough here to divide the tendons and fascia wherever they oppose a replacement of the foot, and an appropriate after-treatment. In the foot, however, where growth is completed or nearly so, the conditions are not the same. Tenotomies and fasciotomies are done as a preliminary step in the operations of talus extirpation or cuneiform osteotomy, in order to determine how extensively they are to be carried out. No single method of operation, whether it be in the class of tenotomies, fasciotomy, or a bone operation, will suffice in the compound deformities of the third degree, and there should be no hesitancy in carrying out the idea of complete and immediate restoration of the foot in adults, especially, for the mortality, under antiseptic precautions, is less than one per cent. In fifty cases of inveterate club-foot in which a bone operation has been done, I have never seen a death, nor a case of infection except in one case. This case was operated upon a second time with a good result, the whole course of the treatment lasting five months.

THE VALUE OF ELECTRICITY IN DIAGNOSIS AND PROGNOSIS OF AFFECTIONS OF THE PERIPHERAL NERVES.[1]

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HAVING been asked to limit my remarks to the value of electricity in the diagnosis and prognosis of disease of isolated peripheral nerves (neuritis and nerve injuries), I shall only venture to present some of the most prominent features relating to this subject.

It would be superfluous before such a body to dwell in detail upon the essential methods of an electrical examination, or to refer to the various batteries. Whatever I may say will no doubt seem trite to the critical members of this Society, who are all more or less familiar with the use of electricity in diseases of the nervous system. To other physicians, not endowed with such special knowledge, a discussion of this nature is not only timely, but of the greatest practical importance.

During the last ten years I have devoted much time and attention to the study of electrical reactions, particularly in the various forms of disease affecting the peripheral nerves, which so often result in motor paresis or paralysis. My conclusions are therefore based upon personal observation in a large number of cases, and are in a great measure confirmatory of the claims of others.

It has been very aptly said: "The popular theory is that the carrying out an electrical investigation requires no special training, and is within the reach of anyone possessing a battery and a superficial knowledge of the medical applications of the current to the human body. . . . The ablest physician, the most consummate neurologist, if he has not submitted himself to the conditions required, and passed through the ordeal of discipleship, will fail to obtain reliable results. . . . But little additional light is shed upon the practical issues of the case by the reaction in a typical instance of infantile or lead paralysis, or of advanced progressive muscular atrophy. Where electro diagnosis is of paramount importance is at the beginning, during the insidious stage of numerous neuropathies."[2]

Comparatively little, or no attention at all, has been given by the general practitioner to the subject of electrodiagnosis, while the neurologist devotes too little time to its study. In all discussions or teachings on medical electricity too much stress has been laid upon its potency or uselessness as a therapeutic agent; while its importance in diagnosis and prognosis has been insufficiently recognized or neglected. The preliminary steps toward success in the study of the affections of the peripheral nerves, particularly where paresis or paralysis is a prominent symptom, consist in the acquirement of a practical familiarity with the position of the principal so-called "motor points," and a correct interpretation of the various electro diagnostic phenomena resulting from an examination of the nerve-trunks and muscles.

By this means we can satisfactorily determine, in the vast majority of cases, whether the disease is situated between the nucleus and the periphery of the motor nerves, or elsewhere. In two similar cases, whose pressure paralysis is of equal severity, the anatomical causes may vary considerably in their extent and intensity. It is only after an electrical examination that any conclusion can be drawn as to the approximate degree of damage to the nerve.

We are also enabled to state, almost accurately in many instances, what the probability is as to recovery, and to express an opinion as to the duration of the paralysis:

1. Preservation of faradic irritability in nerve and muscle, with only very slight decrease as compared with the healthy side, when found two weeks after attack, is of favorable import. Recovery usually takes place spontaneously within a few weeks (see Cases I. and II.).

2. The faradic irritability in both nerve and muscles may be very markedly diminished and accompanied by change in the character of the muscular contraction, which is slow and somewhat protracted. This may be associated with "qualitative" as well as "serial" changes found upon examination with galvanism, *i.e.*, the galvanic excitability in the nerve is present, though diminished, while in both nerve and muscle AnCC > CaCC (the contraction at the closure at the positive pole is greater than at the negative). This has been designated by Erb as the partial reaction of degeneration. It has been known to ultimately advance to complete R. D. Recovery usually takes place in a few months.

3. When the faradic irritability is lost in nerve and muscle, the prognosis remains doubtful. It is usually accompanied by loss of galvanic excitability in the nerve. When galvanism is applied to the muscle it contracts slowly, and the reaction may be more marked at the anodic opening than at the cathodic closure. There may also be increased irritability in the muscle as shown by a marked contraction being elicited by a current which has no effect whatever upon the healthy side.

This constitutes the reaction of degeneration (R. D.) and is of grave significance. The prognosis is doubtful or bad, due consideration being observed as to the cause of the lesion. These patients do occasionally get well, but more rarely when the facial nerve is affected than the nerves of the extremities. As a matter of fact the muscles involved may show various gradations in the character of their galvanic reaction. In my experience the persistent increase in the galvanic excitability influences the prognosis more unfavorably than a mere change in the polar reactions. This I have found to exist in cases of facial paralysis, but I have never seen a case of long standing—a year or more—where a reaction in the muscles to galvanism could not be demonstrated.

In the extremities, however, it is well known that when recovery does not take place, and the musculature atrophies, the galvanic irritability gradually diminishes, and ultimately no contraction can be obtained even with the strongest currents.

It has always seemed to me that there is a decided difference in the course of a facial paralysis as compared with that of nerves in the extremities. It is rare to see atrophy of the facial muscles after a persistent paralysis from the usual causes, while in the extremities atrophy is not at all uncommon. The return of faradic irritability in the facial muscles does not necessarily imply a recovery from the paralysis. I have found it present in cases that were from two to ten years' duration and of undoubted peripheral origin. See Case III., in which R. D. had been present and six months later faradic irritability returned, but motility was not restored.

The following case is still under observation: Annie D——, thirteen years of age. Left peripheral facial paralysis of ten years' duration. Right facial nerve reacts to faradism 30 mm.; left, 35 mm.; right facial muscles, 32 mm; left, 35 mm. (slow).

In the *Berliner klin. Wochenschr.*, October 16, 1893, Placzek reports four cases of peripheral paralysis (facial nerve, 3; brachial plexus, 1), that had existed for periods ranging from two years to twenty-five years (2, 9, 12, 25). Faradic irritability was preserved in both nerve and muscles. There was only slight quantitative decrease. Galvanic excitability was only slightly increased. The character of the muscular contractions was normal. Thus it is clearly shown that despite the paralysis having persisted unchanged for many years, and the nerve being impervious to the strongest voluntary impulses, its reaction upon electrical excitation indicates only a slight quantitative change in irritability. He asks "How are these phenomena to be reconciled with the current teaching as to the existence and course of peripheral paralysis?"

[1] Read at the meeting of the New York Neurological Society, February 6, 1894.

[2] De Watteville.

The only explanation given is based upon the assumption of Erb, that the conductivity in nerves depends on the axis cylinders, while that of electrical irritability exists in the medullary sheath. This view has been confirmed by the experiments of Schiff and Grünhagen [1] Placzek therefore concludes that in the cases reported the presence of an axial neuritis may be the cause of the apparently irreconcilable phenomena. I would hardly be willing to admit that these cases vitiate the teachings as to the usual course of the electro diagnostic phenomena. It seems to me that in old cases accompanied by the persistent classical reaction of degeneration, in which there is complete motor paralysis and muscular atrophy, the difference between the two classes is merely one of degree as to the pathological process.

A further study of the electrical reactions in old cases of peripheral paralysis may show that in the absence of atrophy the faradic irritability will be found present in every case.

On the other hand, motility may be restored in muscles of the extremities, yet faradic irritability may remain absent, or R D may be demonstrable.

It is well to bear in mind that the same electro-diagnostic phenomena occur whether the lesion be situated in the nucleus or in the course of the nerve trunks. When an eye muscle is paralyzed it is either the result of a lesion at the nucleus, in the trunk or branches of the nerve, or in the intramuscular nerve-elements themselves. The action of the current cannot be sufficiently circumscribed in order to produce isolated contraction of individual muscles. Even if such an examination were feasible, electricity could not aid us in making a diagnosis as to the location of the pathological process. As an element in prognosis it is valueless for the same reason.

The direct application of an electrode and the current to the ocular conjunctiva is a painful procedure and is rarely tolerated by the patient. Since the use of cocaine it was hoped that electricity could be applied to the individual ocular muscles after producing anæsthesia of the surface of the eyeball This hope has not been realized. It has been advised, and also attempted, to pierce the conjunctiva with a needle attached to one of the poles of the battery, and thus apply the current directly to the affected muscle. The writer has tested this as a method of treatment in a number of cases, but was forced to abandon it. Even in the hands of an expert it is not unattended with danger to the delicate structures of the eye. This is especially so regarding the use of the galvanic current. The facial nerve and the nerves of the upper extremities are the most accessible to electrical examination, as well as the most frequently affected by disease. The following histories selected from my case books will serve to illustrate the practical utility of electricity as an aid in diagnosis, and also as an auxiliary method in establishing an almost absolute prognosis:

Case I. *Peripheral Facial Paralysis (Traumatic).*—November 1, 1892. A. K——, a boy, ten years of age, was struck by a base-ball on right side of face, and all branches of the nerve became paralyzed within twenty four hours. He was seen three days after the injury, when paralysis was found to be complete. There was also slight disturbance of the sense of taste on the anterior two-thirds of the tongue on the same side. Slight diminution in faradic irritability in nerve and muscles. Left, 10 mm.; right, 15 mm. Two weeks later the motility was returning in facial muscles, the faradic irritability being only very slightly diminished —13 mm. Galvanic reaction normal. A favorable prognosis was given. Complete recovery three weeks later without treatment.

Case II. *Peripheral Facial Paralysis from Exposure to Cold.*—November 9, 1893. Miss G——, seventeen years of age. When seen three days after beginning of attack there was complete facial paralysis upon the right side. No involvement of palate, but loss of taste on the anterior two thirds of tongue on the same side. The left nerve and muscles reacted to faradism 10 mm.; right, 20 mm., showing an early decrease in faradic irritability.

November 16 —Faradism: Left, 10 mm.; right, 15 mm. Galvanic reaction normal; prognosis, good.

December 3 —Faradism: Left, 10 mm; right, 18 mm. Motility partly restored in facial muscles.

January 20, 1894 —No evidence of paralysis. Faradism: Left, 10 mm.; right, 20 mm. Complete recovery within ten weeks without treatment.

Case III. *Peripheral Facial Paralysis from Exposure to Cold.*—October 25, 1891. Miss K——, twenty-four years of age. After sailing in a storm became paralyzed on right side of face. All branches involved. Was first seen by me nine weeks after attack. Left nerve and muscles reacted to faradism 14 mm.; right, no reaction. Galvanism: Left, 2 Ma CaCC, normal in nerve and muscles; right, no reaction in nerve. Muscles react slowly to 1 Ma AnCC > CaCC. In other words, the reaction of degeneration is present. An unfavorable prognosis was given.

December 1.—The galvanic excitability in the muscles is always found increased.

January 31, 1892.—Although the faradic irritability has returned in nerve and muscles (quantitatively diminished) recovery is incomplete, and accompanied by secondary contracture in the zygomatics.

June 4.—Condition unimproved.

Case IV. *Peripheral Facial Paralysis from Exposure to Cold.*—February 13, 1893. Mr. M——, merchant, forty eight years of age. Two days after riding on the platform of an elevated railroad-car during a cold night he first noticed paralysis of the left side of face. All branches are affected. No interference with taste. Was seen three days after attack. Right nerve and muscles react to faradism 14½ mm.; left, 20 mm. (slow). Galvanism: Right, 1½ MaCC; left, 2 Ma AnCC = CaCC.

March 1st.—Left, loss of faradic reaction in nerve and muscles. Loss of galvanic irritability in nerve. Facial muscles react slowly to 1 Ma AnCC > CaCC, showing the reaction of degeneration. Prognosis doubtful.

February, 1894 (one year after onset of attack).—Recovery was almost complete except in lower facial muscles.

Case V. *Traumatic Neuritis of Left Ulnar Nerve.*—William H——, born in England, thirty years of age; diamond polisher. Was first seen February 26, 1889. Three weeks before he had been cut on the left wrist by a broken bottle. The wound had healed. He complained of numbness and tenderness on pressure over the ulnar distribution in the palm. Causalgia: Severe pain at night. Paralysis affecting the two ulnar fingers. There was anæsthesia in the hand in the course of the ulnar branches. Some atrophy of the adductor pollicis and the hypothenar group of muscles. Faradism: Right nerve and muscles, 14½ mm.; left, no reaction below the wrist. Galvanism: Ulnar nerve—right, 2¼ Ma CaCC; left, no reaction in forearm. Muscles—right, hypothenar group interossei and adductor pollices, 6 Ma CaCC; left, hypothenar group interossei, 6 Ma AnCC > CaCC, slow and feeble.

April 5th.—Excessive pain had continued and prevented sleep. Exploratory incision showed that the nerve had been cut across by the injury, and it was found in a condition of typical degeneration. The divided ends were sutured and the wound closed.

May 14th.—Pain had subsided. Anæsthetic area had diminished, and the tactile sensibility was improved. Faradism: Ulnar nerve at elbow 15 mm., only in adductor pollicis. No reaction in hypothenar group. Galvanism: 4 Ma AnCC, affecting adductor pollicis only.

October 24th.—The nerve conduction was steadily improving, so that 5 Ma CaCC produced a reaction in the hypothenar group. The strength in the hand rapidly increased and it was ultimately restored to usefulness.

[1] Zeitschr. f. Med., Bd. 29.

Case VI.—*Paralysis of Brachial Plexus (Bilateral).*—F. S——, aged twenty-five, born in the United States, porter. Was first seen by me September 6, 1890, and gave the following history: While intoxicated he fell asleep on the roof of his house, during a chilly night, August 23d (two weeks ago). Was carried to bed in the early morning and awoke in the afternoon with both arms paralyzed. There was numbness in the arms and fingers, which disappeared in a few days. No pain, no history of syphilis or rheumatism. Lower extremities not affected. While asleep on the roof he was wearing a stiff shirt collar, and he was told that his head was extended backward.

The following condition was found upon examination: Right upper extremity: Paralysis of deltoid, infraspinatus, teres minor, and biceps group. Paresis of supinators and extensors. No triceps jerk. No atrophy. No objective sensory disturbance, but some tenderness on pressure over supraclavicular portion of brachial plexus, causing radiation of pain through the entire arm. Median and ulnar distribution not involved. All nerves and muscles react well to faradism, 23 mm., and also upon irritation at Erb's supraclavicular point. Galvanic reactions normal.

Left upper extremity: Paralysis of deltoid, infraspinatus, and teres minor biceps group and latissimus dorsi. Paresis of the subscapularis and teres major, triceps, supinators, and extensors. No triceps jerk. No atrophy. No sensory disturbance. Tenderness on pressure over the brachial plexus in the neck. Median and ulnar nerves normal. The deltoid, triceps, and biceps group react well to faradism, 26 mm.; musculo spiral nerve, 31 mm.; extensors, 35 mm. (feeble). Galvanic reaction normal. Both shoulder joints relaxed and paretic muscles are flaccid. Lower extremities in good condition.

The treatment consisted in the application of blisters over the points of tenderness and the use of the galvanic current. A favorable prognosis was given. By the end of October recovery was complete.

From the foregoing history the distribution of the paralysis and the painful pressure points the diagnosis was made of traumatic neuritis of the brachial plexus resulting from pressure. The preservation of faradic irritability proved of service in forming a prognosis. This is representative of a class of cases of peripheral paralysis where the faradic irritability is preserved (or only slightly diminished) as well as all forms of sensation.

Case VII. *Spontaneous Degenerative Neuritis of the Brachial Plexus.*[1]—A man, thirty eight years of age, shortly after exposure to cold (without antecedent history of joint disease or injury) suffered from severe paroxysmal pain in the left shoulder, rapidly followed by paralysis of the deltoid. After short but varying intervals of freedom from acute pain another paroxysm would occur, accompanied by additional paralysis. These attacks, extending over a period of four weeks, involved all of the muscles innervated by the circumflex, suprascapular, subscapular, musculo-cutaneous, and musculo-spiral nerves. There was anæsthesia in the domain of the circumflex, external cutaneous, and radial nerves. Well-marked atrophy with the reaction of degeneration existed in all of the paralyzed muscles excepting the biceps group, in which only a "partial R. D." was demonstrable. The median and ulnar nerves were not involved. Almost complete recovery took place at the end of two years. The biceps group, presenting "partial R. D.," recovered first, while the supinator longus and the extensors of the forearm, exhibiting "complete R. D.," were the last to show signs of improvement.

If electricity is to be of any service to us in ascertaining whether the nerve-trunk has been divided or not as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electro-motive force, resistance, and current strength. It also requires much time, patience, and perseverance. Hence its unpopularity.

The musculo-spiral nerve, which seems to lose its irritability more readily than most of the other nerves of the body, presents some special peculiarities that are worthy of note. In apparently healthy people I have very often failed to demonstrate the faradic reaction of this nerve, and was unable to satisfactorily account for its absence. This occurred, as a rule, in muscular individuals, in whom the examination is occasionally difficult. With the small electrode over the nerve I could not elicit a response, even with strong currents, while the extensors reacted normally upon direct excitation. In the absence of evidence of disease I attributed this failure to the action of the current producing muscular contractions *in situ* sufficient to throw the electrode aside. With the electrode, however, in the same position—without having been removed—and the galvanic current substituted, the response would take place promptly. It may be that in some of the cases the faradic anode was used, thus accounting for the absence of the usual reaction (*vide infra*).

In the *Berliner Deutsch. med. Wochenschr.*, 1892, p. 747, Dr. Karl Gumpertz claimed that it was possible to make the anticipatory diagnosis of lead paralysis and paralysis due to other forms of neuritis even in cases where the typical extensor paralysis is absent, and where the electrical reaction of the muscles suspected of disease is shown by the direct examination to be practically normal. He called attention to the fact that in the musculo spiral nerve excitation with the faradic anode fails to elicit a response, while with the faradic cathode a distinct reaction is produced. Subsequently this claim was found to be fallacious by Dr. J. J. Putnam,[1] of Boston. He discovered that this peculiarity in reaction also existed in a certain proportion of apparently healthy people. I have been enabled to fully confirm the statements of Dr. Putnam, but, like him, am at a loss to give a satisfactory explanation of this phenomenon. While the cathode of the faradic break current can easily be recognized by its greater effect upon motor and sensory nerves, this relative difference in the strength of the poles and their action is insufficient to account for this peculiarity.

I have thus far examined twenty three cases with the following result: With the faradic anode over the nerve no contraction could be obtained in three cases with a strong and painful current, excepting in the supinator longus. In two there was no reaction whatever in the distribution of the nerve. In all of these five a comparatively weak current gave a well-marked reaction—when the faradic cathode was applied. As was to be expected the extensors reacted normally upon direct excitation, invariably requiring a greater length of coil at the anode. I am making more extended investigation along this line, and hope to report the result upon some future occasion.

The following conclusions will no doubt serve to controvert a number of popular fallacies relating to this subject:

1. That the value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not as universally recognized as its importance demands.

2. That the result of this procedure often furnishes corroborative and conclusive evidence where only a provisional diagnosis has been made.

3. That the necessary technical skill in successfully pursuing such investigation and correctly interpreting

[1] "A Contribution to the Clinical Study of Spontaneous Degenerative Neuritis of the Brachial Plexus," by the writer, Journal of Mental and Nervous Diseases, January, 1890.

[1] Boston Medical and Surgical Journal, March 30, 1893.

The length of time that asthma has existed is no factor in estimating the chances of a cure. The question is, has any permanent damage been done to the nervous system or air-passages? If so, then in either case the prognosis will necessarily be a modified one.

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INTRA-NASAL GROWTHS AS FACTORS IN AURAL AND LARYNGEAL CATARRH.[1]

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Mr. President and Members: The paper I shall present is one that I read before the Onondaga County Medical Society September 15, 1891. My object and apology for resurrecting it is twofold:

First, because it contains observations on the middle turbinated region of the nose, which was then, and is now, of great interest to me, and which I believe has received too little notice even by the specialist, compared to its fertility as a source of neuralgic and catarrhal affections.

Second, because I can report the result of treatment in the patients mentioned.

Of the three cases mentioned, I would say, two occurred in private and one in dispensary practice, illustrating, I think, the importance of intra-nasal disease as a factor in middle-ear, pharyngeal, and laryngeal catarrh.

Hoping that you will pardon me, I read the notes as in the original article.

Case I.—Mr. N——, a young man twenty-five years of age; native born; generally robust, and of good family history. About four months ago he noticed an impairment in the hearing of his left ear, and a continuous noise as of escaping steam. This went on steadily, and, when he came to me for treatment, I found the left drum membrane slightly shrunken, with some opacity, especially in posterior quadrant; right drum membrane somewhat inflamed around edges and over malleus; left hearing distance, $\frac{4}{100}$; right hearing distance, $\frac{100}{100}$, or normal.

Examination by tuning-fork showed that in the left ear the bone conduction was ten seconds better than the air conduction; right ear normal; left Eustachian tube also in a state of catarrhal inflammation, air being with difficulty forced through it.

With such proofs before us, we could not doubt that the trouble was one of catarrh of the middle ear. No history could be elicited of acute trouble following any of the exanthematous fevers, or of pain in ears at any time; but by posterior rhinoscopy I found the post-nasal space roomy, numerous varicose veins and inflamed patches scattered over surface of membrane, particularly in neighborhood of Eustachian tubes; the posterior ends of both middle and inferior turbinates covered with pale, hypertrophied tissue. Anterior rhinoscopy showed septum a little deflected to right with large spur in lower third touching and pressing against inferior turbinated, and another marked thickening in the upper third projecting in front of, and pressing against, the middle turbinated, which was also enlarged; left nostril pretty well filled with hypertrophied tissue, the whole bathed with more or less mucus.

Upon inquiry, I found that the nasal trouble had been with him for a long time, while the ear affection was of comparatively recent origin, and we cannot doubt that it came by gradual extension from, or in sympathy with, the catarrhal inflammation within the nose. Do not understand me to say, in all cases in which there are septal deflections, ridges, or spurs, we will find catarrh of the middle ear, or that all catarrhal conditions of the middle ear come from septal deformities; far from it. I think there are many such deformities that are perfectly innocent, but I do believe that whenever a deformity or overgrowth in any portion of the nose causes a contact between two surfaces that are not normally in contact, we will have a catarrhal inflammation arising from such a contact, which, acting in conjunction with the climatic influences we have in this section, is very liable to extend to either the ear or throat.

Professor St. John Roosa, John N. McKensie, and other authorities consider that fully seventy-five per cent. of all ear troubles are caused by intra nasal disease. McKensie further says, in vol. viii. of the "Reference Hand-book:" "It is impossible to exaggerate the part which diseases of the nose play in the production of inflammatory conditions of the middle ear." And my experience thus far, gentlemen, fully confirms this view. In fact, since my attention was particularly called to the middle turbinated bodies by an article in the *New York Medical Journal*, vol. li., p. 309, 1890, written by Dr. O. B. Douglas, of New York, I have made more careful examinations of this section of the nose, and, as yet, have found no case of post-nasal, middle ear, or laryngeal catarrh which was not accompanied by marked evidences, past or present, of pressure or contact of some of the surfaces in this region.

Many of these cases have shown a perfectly normal condition of nose in lower third, both inferior turbinated apparently healthy, and patients claiming that they had no trouble in breathing, each nostril being perfectly free; their complaint, as they say, "is further back or down," sometimes in the ear, sometimes in the larynx, and often their only symptom is of "something dropping into the throat."

A close examination of the upper portions of the nose will show, almost invariably, some point or points of contact between the middle turbinated and the septum or the outer wall of the nose, which, though slight in many instances, is, I believe, the cause of a great, and perhaps the whole, part of the trouble, particularly if the contact be persistent.

Case II.—Mr. F—— is a public speaker with the well-known clergyman's sore throat. He has been troubled since childhood with nostrils closing up frequently, and, at certain seasons of the year, having asthmatic attacks. Often wakes and finds that he has been sleeping with his mouth open; extreme hoarseness coming on with the slightest cold; occasional ringing in the ears, and of late an excessive amount of saliva. One year ago there was a complete loss of voice for nearly three weeks.

Upon examination, I found the whole pharynx intensely congested; posterior wall showing granulated areas; uvula œdematous; anterior and lateral pillars of fauces infiltrated. Post-nasal space showed same general appearance as the pharynx. An anterior view of the nostrils disclosed to us the cause of his troubles, the membrane of both inferior turbinated being puffy and thickened, middle turbinated bodies very much overgrown in bony and membranous formation.

There are, of course, many points of contact and some inflamed and thickened tissue that must be relieved before we can expect to do our patient permanent good, granting that the nasal abnormality is the cause of his pharyngitis. In this instance, we have a man who uses his voice excessively, and at times, when he is weary, I have no doubt his vocal production is faulty. That, of course, has its influence on his condition, and will have to be looked into and corrected.

In support of this plan of treatment, I will quote from Lenox Brown, of London, in his last edition of "Disease of the Throat," p. 117. He says: "I have seldom failed to find the cause of the vocal lesion in the nose or pharynx, and a cure effected by surgical treatment of those regions, supplemented by educational correction of a functional fault in production."

I will not weary you with the full notes of Case III.—Suffice to say that he is a German, age twenty-two, referred to me by Dr. S——; general health good; been in

[1] Read before the Onondaga County Medical Society September 15, 1891. Read again before the Syracuse Medical Association March 21, 1893, giving result of treatment in the cases reported.

Case VI.—*Paralysis of Brachial Plexus (Bilateral).*—F. S——, aged twenty-five, born in the United States, porter. Was first seen by me September 6, 1890, and gave the following history: While intoxicated he fell asleep on the roof of his house, during a chilly night, August 23d (two weeks ago). Was carried to bed in the early morning and awoke in the afternoon with both arms paralyzed. There was numbness in the arms and fingers, which disappeared in a few days. No pain, no history of syphilis or rheumatism. Lower extremities not affected. While asleep on the roof he was wearing a stiff shirt collar, and he was told that his head was extended backward.

The following condition was found upon examination: Right upper extremity: Paralysis of deltoid, infraspinatus, teres minor, and biceps group. Paresis of supinators and extensors. No triceps jerk. No atrophy. No objective sensory disturbance, but some tenderness on pressure over supraclavicular portion of brachial plexus, causing radiation of pain through the entire arm. Median and ulnar distribution not involved. All nerves and muscles react well to faradism, 23 mm., and also upon irritation at Erb's supraclavicular point. Galvanic reactions normal.

Left upper extremity: Paralysis of deltoid, infraspinatus, and teres minor biceps group and latissimus dorsi. Paresis of the subscapularis and teres major, triceps, supinators, and extensors. No triceps jerk. No atrophy. No sensory disturbance. Tenderness on pressure over the brachial plexus in the neck. Median and ulnar nerves normal. The deltoid, triceps, and biceps group react well to faradism, 26 mm.; musculo-spiral nerve, 31 mm.; extensors, 35 mm. (feeble). Galvanic reaction normal. Both shoulder joints relaxed and paretic muscles are flaccid. Lower extremities in good condition.

The treatment consisted in the application of blisters over the points of tenderness and the use of the galvanic current. A favorable prognosis was given. By the end of October recovery was complete.

From the foregoing history the distribution of the paralysis and the painful pressure points the diagnosis was made of traumatic neuritis of the brachial plexus resulting from pressure. The preservation of faradic irritability proved of service in forming a prognosis. This is representative of a class of cases of peripheral paralysis where the faradic irritability is preserved (or only slightly diminished) as well as all forms of sensation.

Case VII. *Spontaneous Degenerative Neuritis of the Brachial Plexus.*[1]—A man, thirty eight years of age, shortly after exposure to cold (without antecedent history of joint disease or injury) suffered from severe paroxysmal pain in the left shoulder, rapidly followed by paralysis of the deltoid. After short but varying intervals of freedom from acute pain another paroxysm would occur, accompanied by additional paralysis. These attacks, extending over a period of four weeks, involved all of the muscles innervated by the circumflex, suprascapular, subscapular, musculo-cutaneous, and musculo-spiral nerves. There was anæsthesia in the domain of the circumflex, external cutaneous, and radial nerves. Well-marked atrophy with the reaction of degeneration existed in all of the paralyzed muscles excepting the biceps group, in which only a "partial R. D." was demonstrable. The median and ulnar nerves were not involved. Almost complete recovery took place at the end of two years. The biceps group, presenting "partial R. D.," recovered first, while the supinator longus and the extensors of the forearm, exhibiting "complete R. D.," were the last to show signs of improvement.

If electricity is to be of any service to us in ascertaining whether the nerve-trunk has been divided or not as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electro-motive force, resistance, and current strength. It also requires much time, patience, and perseverance. Hence its unpopularity.

The musculo-spiral nerve, which seems to lose its irritability more readily than most of the other nerves of the body, presents some special peculiarities that are worthy of note. In apparently healthy people I have very often failed to demonstrate the faradic reaction of this nerve, and was unable to satisfactorily account for its absence. This occurred, as a rule, in muscular individuals, in whom the examination is occasionally difficult. With the small electrode over the nerve I could not elicit a response, even with strong currents, while the extensors reacted normally upon direct excitation. In the absence of evidence of disease I attributed this failure to the action of the current producing muscular contractions *in situ* sufficient to throw the electrode aside. With the electrode, however, in the same position—without having been removed—and the galvanic current substituted, the response would take place promptly. It may be that in some of the cases the faradic anode was used, thus accounting for the absence of the usual reaction (*vide infra*).

In the *Berliner Deutsch. med. Wochenschr.*, 1892, p. 747, Dr. Karl Gumpertz claimed that it was possible to make the anticipatory diagnosis of lead paralysis and paralysis due to other forms of neuritis even in cases where the typical extensor paralysis is absent, and where the electrical reaction of the muscles suspected of disease is shown by the direct examination to be practically normal. He called attention to the fact that in the musculo spiral nerve excitation with the faradic anode fails to elicit a response, while with the faradic cathode a distinct reaction is produced. Subsequently this claim was found to be fallacious by Dr. J. J. Putnam,[1] of Boston. He discovered that this peculiarity in reaction also existed in a certain proportion of apparently healthy people. I have been enabled to fully confirm the statements of Dr. Putnam, but, like him, am at a loss to give a satisfactory explanation of this phenomenon. While the cathode of the faradic break current can easily be recognized by its greater effect upon motor and sensory nerves, this relative difference in the strength of the poles and their action is insufficient to account for this peculiarity.

I have thus far examined twenty three cases with the following result: With the faradic anode over the nerve no contraction could be obtained in three cases with a strong and painful current, excepting in the supinator longus. In two there was no reaction whatever in the distribution of the nerve. In all of these five a comparatively weak current gave a well-marked reaction—when the faradic cathode was applied. As was to be expected the extensors reacted normally upon direct excitation, invariably requiring a greater length of coil at the anode. I am making more extended investigation along this line, and hope to report the result upon some future occasion.

The following conclusions will no doubt serve to controvert a number of popular fallacies relating to this subject:

1. That the value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not as universally recognized as its importance demands.

2. That the result of this procedure often furnishes corroborative and conclusive evidence where only a provisional diagnosis has been made.

3. That the necessary technical skill in successfully pursuing such investigation and correctly interpreting

[1] "A Contribution to the Clinical Study of Spontaneous Degenerative Neuritis of the Brachial Plexus," by the writer, Journal of Mental and Nervous Diseases, January, 1890.

[1] Boston Medical and Surgical Journal, March 30, 1893.

The length of time that asthma has existed is no factor in estimating the chances of a cure. The question is, has any permanent damage been done to the nervous system or air-passages? If so, then in either case the prognosis will necessarily be a modified one.

204 State Street.

INTRA-NASAL GROWTHS AS FACTORS IN AURAL AND LARYNGEAL CATARRH.[1]

By SARGENT F. SNOW, M.D.,

AURIST AND LARYNGOLOGIST TO THE HOUSE OF THE GOOD SHEPHERD AND THE SYRACUSE FREE DISPENSARY; MEMBER OF THE CENTRAL NEW YORK MEDICAL ASSOCIATION, THE SYRACUSE ACADEMY OF MEDICINE, THE ONONDAGA COUNTY MEDICAL SOCIETY, ETC.

Mr. President and Members: The paper I shall present is one that I read before the Onondaga County Medical Society September 15, 1891. My object and apology for resurrecting it is twofold:

First, because it contains observations on the middle turbinated region of the nose, which was then, and is now, of great interest to me, and which I believe has received too little notice even by the specialist, compared to its fertility as a source of neuralgic and catarrhal affections.

Second, because I can report the result of treatment in the patients mentioned.

Of the three cases mentioned, I would say, two occurred in private and one in dispensary practice, illustrating, I think, the importance of intra-nasal disease as a factor in middle-ear, pharyngeal, and laryngeal catarrh.

Hoping that you will pardon me, I read the notes as in the original article.

Case I.—Mr. N——, a young man twenty-five years of age; native born; generally robust, and of good family history. About four months ago he noticed an impairment in the hearing of his left ear, and a continuous noise as of escaping steam. This went on steadily, and, when he came to me for treatment, I found the left drum membrane slightly shrunken, with some opacity, especially in posterior quadrant; right drum membrane somewhat inflamed around edges and over malleus; left hearing distance, $\frac{4}{100}$; right hearing distance, $\frac{100}{100}$, or normal.

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With such proofs before us, we could not doubt that the trouble was one of catarrh of the middle ear. No history could be elicited of acute trouble following any of the exanthematous fevers, or of pain in ears at any time; but by posterior rhinoscopy I found the post-nasal space roomy, numerous varicose veins and inflamed patches scattered over surface of membrane, particularly in neighborhood of Eustachian tubes; the posterior ends of both middle and inferior turbinates covered with pale, hypertrophied tissue. Anterior rhinoscopy showed septum a little deflected to right with large spur in lower third touching and pressing against inferior turbinated, and another marked thickening in the upper third projecting in front of, and pressing against, the middle turbinated, which was also enlarged; left nostril pretty well filled with hypertrophied tissue, the whole bathed with more or less mucus.

Upon inquiry, I found that the nasal trouble had been with him for a long time, while the ear affection was of comparatively recent origin, and we cannot doubt that it came by gradual extension from, or in sympathy with, the catarrhal inflammation within the nose. Do not understand me to say, in all cases in which there are septal deflections, ridges, or spurs, we will find catarrh of the middle ear, or that all catarrhal conditions of the middle ear come from septal deformities; far from it. I think there are many such deformities that are perfectly innocent, but I do believe that whenever a deformity or overgrowth in any portion of the nose causes a contact between two surfaces that are not normally in contact, we will have a catarrhal inflammation arising from such a contact, which, acting in conjunction with the climatic influences we have in this section, is very liable to extend to either the ear or throat.

Professor St. John Roosa, John N. McKensie, and other authorities consider that fully seventy-five per cent. of all ear troubles are caused by intra nasal disease. McKensie further says, in vol. viii. of the "Reference Hand-book:" "It is impossible to exaggerate the part which diseases of the nose play in the production of inflammatory conditions of the middle ear." And my experience thus far, gentlemen, fully confirms this view. In fact, since my attention was particularly called to the middle turbinated bodies by an article in the *New York Medical Journal*, vol. li., p. 309, 1890, written by Dr. O. B. Douglas, of New York, I have made more careful examinations of this section of the nose, and, as yet, have found no case of post-nasal, middle ear, or laryngeal catarrh which was not accompanied by marked evidences, past or present, of pressure or contact of some of the surfaces in this region.

Many of these cases have shown a perfectly normal condition of nose in lower third, both inferior turbinated apparently healthy, and patients claiming that they had no trouble in breathing, each nostril being perfectly free; their complaint, as they say, "is further back or down," sometimes in the ear, sometimes in the larynx, and often their only symptom is of "something dropping into the throat."

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In support of this plan of treatment, I will quote from Lenox Brown, of London, in his last edition of "Disease of the Throat," p. 117. He says: "I have seldom failed to find the cause of the vocal lesion in the nose or pharynx, and a cure effected by surgical treatment of those regions, supplemented by educational correction of a functional fault in production."

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this country one year, and for past three months has had difficulty with his throat; voice husky and easily fatigued, it having been, at one time, entirely lost. He first noticed a fulness in his head and nose ten months ago.

Examination showed a decidedly inflamed larynx, pharynx infiltrated with a very red track extending up along lateral walls to post nasal space; turbinated bodies puffy and in stage of commencing hypertrophy; bony union between left inferior turbinated and lower third of septum; many points of contact in both nostrils.

Topical applications to the vocal bands and pharynx have reduced the inflamed conditions existing there. Cleansing and applications to the nasal tissues, have given him, for the present, a good breathing space, though the bridge of bone and some points of contact still remain.

Are we warranted in considering these contacts and deformities as etiological factors of his laryngeal trouble?

Referring to Sajous's recent work on "Diseases of the Nose and Throat," p. 336, we find that he says: "Chronic inflammation of the vocal bands may result from repeated attacks of subacute laryngitis in connection with acute pharyngitis, but in the majority of cases it assumes the chronic form from the first, unpreceded by acute symptoms. Hypertrophic rhinitis is a frequent complication of this affection, the chronic catarrhal inflammation extending by continuity of tissue to the larynx, which is itself made subject to all the exacerbations which the nasal disease undergoes. A more frequent connection between the two diseases, however, is the irritation kept up by the post nasal discharges, which either drop into the larynx, or trickle down along the posterior pharyngeal wall until the interarytenoid commissure is reached; here they accumulate to a degree, and maintain the posterior portion of the larynx in a constant state of irritation, which is further aggravated by the coughing and hacking induced. This cause of chronic laryngitis is insisted upon by Bosworth, and I can well confirm his opinion."

Regarding prognosis Professor Douglass, in his very able article before referred to, says: "Chronic nasal catarrh, so called, is not so difficult of cure as has been supposed, for it is the result of removable causes in most cases."

In the face of these authorities, and the light of our present knowledge, what shall we do with cases of chronic nasal, aural, and laryngeal inflammation? Shall we patch them up with a gargle or spray, and send them adrift to soon become the prey of some quack who has push, enterprise, and the newspaper to help him; or, shall we see that they continue on to a removal of the cause, relieving the point of contact or pressure by such operative procedure as may be necessary, and carrying out the other treatment as may be indicated?

If we follow our plain duty, I believe that our results will be very satisfactory, and we can confidently expect to soon throw off the weight of opprobrium that has been hanging upon us as a profession because of our failure in the past to cure "catarrh."

Since reading the above before the County Society, gentlemen, I have continued treatment in the cases mentioned. Perhaps a description of their present condition will be of interest to you.

Case I.—The young man with middle-ear catarrh has proved especially interesting to me, strengthening my belief that pressure or contacts in the middle turbinated regions, have a marked influence over middle-ear troubles. During the first of his course of treatment I removed by the saw the shelf of bone spoken of, and by the galvano-cautery enough of the hypertrophied tissue to give him sufficient breathing space, meanwhile treating the ear carefully by inflation, vaporizing through Eustachian catheter, etc.

At the end of three months we found that no improvement had been made in his hearing distance, though his nasal catarrh was considerably relieved. I urged him to submit to a removal of a bean-like enlargement found on each middle turbinated, pressing against the anterior wall of the nose. This he refused, and I lost sight of him until December 14, 1892, when he returned, and examination showed right hearing distance $\frac{1}{100}$, left hearing distance $\frac{1}{100}$, a loss of three inches since first examination.

During the six months following I operated on the growths mentioned, with the result that his hearing distance in affected ear was increased to $\frac{10}{100}$, a gain of nine inches. Unfortunately he was called out of town, and we were again interrupted, though I am informed that he continues to improve. The same aural medication was given in this as in his first course of treatment.

If I had not already trespassed too much on your time, I would read you notes of several more cases, in which equally as good and better results have been attained after similar operation in the olfactory region, but in which my most careful ear treatment had failed to increase their hearing distance previous to relieving the contacts and pressures in the upper regions of the nose.

Added experience and the recent observations of good authorities, notably the article on "Cyst of the Middle Turbinated Bone," written by Professor Charles H. Knight, have substantiated the opinion I expressed in 1891, that pressures or contacts in the middle turbinated region were very important, and I would urge all who are doing intra-nasal work to examine this section thoroughly, not alone because of its relation to ear and throat troubles, but because of its close connection with asthma, hemicrania, and neuralgic affections of the head.

Operations here are not necessarily painful, if two or three applications of a twenty per cent. solution of cocaine be carried well in and along the lateral surfaces of the offending overgrowth; neither are they attended with much danger if proper after-treatment be given, though close discrimination should be used about the extent and manner of operating, removing only such portions as is necessary to relieve the pressure or contact.

Case II.—The clergyman has had a full course of operative treatment, and a most satisfactory result. During the past year he has had no attack of asthma, no pharyngitis, laryngitis, or ringing in the ears; neither has he been bothered by repeated colds, nor a stuffed-up nose. In a conversation last week he told me that he could not estimate in money the benefit he had derived. The specimens I now show you I removed from his nose by the cold snare. As you will see, they are partly cystic in character, and of unusual size (see photograph).

Case III.—The young German continued his treatment until the symptoms complained of were relieved, the voice being fully restored. The shelf across left nostril was removed by the electro-trephine, consequently the pieces taken out were not saved, though I recollect that it was a common osseous growth about an inch long.

In conclusion, let me say that I have no doubt the notes of other specialists will show fully as good results as those I have mentioned, and I would respectfully ask the general practitioner to not pass over the articles in his journals relating to rhinology, otology, or laryngology, but stop and carefully read a few of them. If he does so, I think disparaging remarks made about the treatment of chronic catarrhal affections will be less frequent.

117 East Jefferson Street.

The Duke of Westminster, although he is a vice-president of St. George's Hospital, refuses, so it is reported, to let any of his houses in the West End of London to medical men, fearing that their presence will frighten away his fashionable tenants.

AN EARLY OVARIOTOMIST.

The younger, and most of the older, members of the profession in America have little conception of the violent opposition there was, fifty and even thirty years ago, to the performance of operations on the abdominal cavity. Those who undertook such operations in the face of almost universal condemnation did so with their reputations in their hands. They believed they were right and they had the courage of their convictions, but their courage was of no mean order, and entitles them to grateful recognition by posterity. We have all heard of McDowell and Rogers and the Atlees, but we doubt if the name of Dunlap is as familiar to our readers as it deserves to be.

At the recent meeting of the American Gynecological Association in Washington, Dr. J. C. Reeve read a most interesting memoir (New York *Journal of Gynæcology and Obstetrics*, June, 1894) of this pioneer ovariotomist, Dr. Alexander Dunlap, of Springfield, O., whose death, at the ripe old age of seventy-nine, occurred in January last. Dr. Dunlap was born in Ohio, received his education, both academic and medical, in that State, married there, practised there, and died there. He was not a cultured man in the ordinary acceptation of that term, nor were books his companions. He studied, as most men of his time were obliged to study, in the school of experience. He knew little of what his predecessors had done or his contemporaries were doing, but struck out new paths for himself, undeterred by the reprobation of others less original and less courageous, and, in his ignorance of what other great minds had conceived and executed, unencouraged by their success.

Dr. Dunlap's first ovariotomy was performed in 1843, and up to 1868 his cases numbered thirty-eight. Of these nine had resulted fatally, one from an overdose of morphine administered by mistake. During his entire career he performed four hundred and twenty-eight abdominal sections, with eighty-three per cent. of recoveries.

His method of operating was primitive in the extreme. Dr. Reeve assisted him in some of his earlier cases, and the following are his words in describing them:

"Scalpel, forceps, and director were the only instruments provided. The abdomen was opened, the cyst exposed, then incised with the scalpel, and its contents caught in a wash-basin. Adhesions were separated as the cyst was withdrawn, or the incision was extended without hesitation in order to gain access to them. Bleeding from separated adhesions was checked by the application of cold water. In one case this was continued for twenty minutes and no evil results followed. In closing the wound the stitches were not passed through the peritoneum. The pedicle was transfixed with a ligature of heavy silk, each half tied separately, then one end carried around the whole and tied again; one end was then cut short and the other brought out at the lower angle of the wound, there to hang until separated by process of ulceration. This always required weeks, sometimes many months. In the case of a girl, aged thirteen, operated on by the writer, where this plan was followed, more than a year elapsed before the ligature came away, and this in spite of all measures to hasten it. This mode of treatment of the pedicle seems very strange in view of the fact that in Dr. Dunlap's first case both ends of the ligature were cut short, the pedicle dropped back, and the wound closed. There is not the slightest probability that Dr. Dunlap knew, even as late as 1868, that this was the plan pursued by Nathan Smith, in 1821, the second operator in the United States, and by D. L. Rogers, of New York, the fourth, in 1829. It looks very much as if, after his first case, he informed himself as to the plan followed by McDowell and Atlee, and made this step backward under the influence of their example."

"The treatment received by Dr. Dunlap," says the author of this most interesting biographical sketch, "was of the same kind as that meted out to McDowell. The comments of the *Medico-Chirurgical Review* of London, then the leading journal of the world, upon his operation are well known: 'We entirely disbelieve that it has ever been performed with success—nor do we think it ever will!' The extent, the bitterness, the persistency of the opposition to ovariotomy, the denunciation of those who performed it, can scarcely be imagined now. It is recorded in the pages of Peaslee and of Atlee. Nor was this feeling confined to this country. Mr. Ernest Hart has recently told us that in London, during the first attempts at ovariotomy, Dr. Robert Lee, then the leading obstetrician, openly stated that he was watching for a fatal case that he might cause the operator to be legally prosecuted! He who now, after fifty years of service, would indicate the most striking contrast between the profession as it is to-day and as it was when he entered it, would not find that contrast in the possession of anæsthetics nor in the triumphs of abdominal surgery, where even ovariotomy has sunk to a position of minor importance; but he would find it in the different spirit with which new doctrines, new measures, and new operations are received. The *Zeitgeist* of medicine has taken on an entirely different form from that of a generation ago."

THE DEVELOPMENT OF THE RAILWAY SURGEON.

The growth of the railway surgeon and of railway surgical service is, we believe, a feature of professional development peculiar to this country.

There are at present 147,704 miles of railways in the United States and Canada, and all but 17,088 miles are watched over, more or less, by surgeons in the employ of the corporations. The total number of railway surgeons is 5,466. The railways which possess a hospital system cover 36,751 miles; railways with a relief service, 13,446 miles; and railways with a surgical service and chief surgeon, 44,281 miles. There is a National Association of Railway Surgeons with a membership of 1,767 and an organ called *The Railway Surgeon*.

According to this journal there are over 120 chief surgeons, representing 82,032 miles of railway employing 3,384 surgeons, "all of which [*sic*] are working harmoniously under a chief surgeon, who in each instance has, to a greater or less extent, charge of the surgical department of the company he represents. We have great reason to rejoice and be glad and to congratulate this association on the work it has accomplished."

The Railway Surgeon admits that there are some who assert that there is no special field for railway surgery, which really cannot differ, so far as we can see, from any other surgery. We have also heard the complaint that

this country one year, and for past three months has had difficulty with his throat; voice husky and easily fatigued, it having been, at one time, entirely lost. He first noticed a fulness in his head and nose ten months ago.

Examination showed a decidedly inflamed larynx, pharynx infiltrated with a very red track extending up along lateral walls to post nasal space; turbinated bodies puffy and in stage of commencing hypertrophy; bony union between left inferior turbinated and lower third of septum; many points of contact in both nostrils.

Topical applications to the vocal bands and pharynx have reduced the inflamed conditions existing there. Cleansing and applications to the nasal tissues, have given him, for the present, a good breathing space, though the bridge of bone and some points of contact still remain.

Are we warranted in considering these contacts and deformities as etiological factors of his laryngeal trouble?

Referring to Sajous's recent work on "Diseases of the Nose and Throat," p. 336, we find that he says: "Chronic inflammation of the vocal bands may result from repeated attacks of subacute laryngitis in connection with acute pharyngitis, but in the majority of cases it assumes the chronic form from the first, unpreceded by acute symptoms. Hypertrophic rhinitis is a frequent complication of this affection, the chronic catarrhal inflammation extending by continuity of tissue to the larynx, which is itself made subject to all the exacerbations which the nasal disease undergoes. A more frequent connection between the two diseases, however, is the irritation kept up by the post nasal discharges, which either drop into the larynx, or trickle down along the posterior pharyngeal wall until the interarytenoid commissure is reached; here they accumulate to a degree, and maintain the posterior portion of the larynx in a constant state of irritation, which is further aggravated by the coughing and hacking induced. This cause of chronic laryngitis is insisted upon by Bosworth, and I can well confirm his opinion."

Regarding prognosis Professor Douglass, in his very able article before referred to, says: "Chronic nasal catarrh, so called, is not so difficult of cure as has been supposed, for it is the result of removable causes in most cases."

In the face of these authorities, and the light of our present knowledge, what shall we do with cases of chronic nasal, aural, and laryngeal inflammation? Shall we patch them up with a gargle or spray, and send them adrift to soon become the prey of some quack who has push, enterprise, and the newspaper to help him; or, shall we see that they continue on to a removal of the cause, relieving the point of contact or pressure by such operative procedure as may be necessary, and carrying out the other treatment as may be indicated?

If we follow our plain duty, I believe that our results will be very satisfactory, and we can confidently expect to soon throw off the weight of opprobrium that has been hanging upon us as a profession because of our failure in the past to cure "catarrh."

Since reading the above before the County Society, gentlemen, I have continued treatment in the cases mentioned. Perhaps a description of their present condition will be of interest to you.

Case I.—The young man with middle-ear catarrh has proved especially interesting to me, strengthening my belief that pressure or contacts in the middle turbinated regions, have a marked influence over middle-ear troubles. During the first of his course of treatment I removed by the saw the shelf of bone spoken of, and by the galvano cautery enough of the hypertrophied tissue to give him sufficient breathing space, meanwhile treating the ear carefully by inflation, vaporizing through Eustachian catheter, etc.

At the end of three months we found that no improvement had been made in his hearing distance, though his nasal catarrh was considerably relieved. I urged him to submit to a removal of a bean-like enlargement found on each middle turbinated, pressing against the anterior wall of the nose. This he refused, and I lost sight of him until December 14, 1892, when he returned, and examination showed right hearing distance $\frac{1}{100}$, left hearing distance $\frac{1}{100}$, a loss of three inches since first examination.

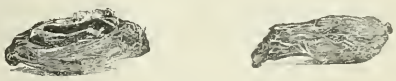
During the six months following I operated on the growths mentioned, with the result that his hearing distance in affected ear was increased to $\frac{10}{100}$, a gain of nine inches. Unfortunately he was called out of town, and we were again interrupted, though I am informed that he continues to improve. The same aural medication was given in this as in his first course of treatment.

If I had not already trespassed too much on your time, I would read you notes of several more cases, in which equally as good and better results have been attained after similar operation in the olfactory region, but in which my most careful ear treatment had failed to increase their hearing distance previous to relieving the contacts and pressures in the upper regions of the nose.

Added experience and the recent observations of good authorities, notably the article on "Cyst of the Middle Turbinated Bone," written by Professor Charles H. Knight, have substantiated the opinion I expressed in 1891, that pressures or contacts in the middle turbinated region were very important, and I would urge all who are doing intra-nasal work to examine this section thoroughly, not alone because of its relation to ear and throat troubles, but because of its close connection with asthma, hemicrania, and neuralgic affections of the head.

Operations here are not necessarily painful, if two or three applications of a twenty per cent. solution of cocaine be carried well in and along the lateral surfaces of the offending overgrowth; neither are they attended with much danger if proper after-treatment be given, though close discrimination should be used about the extent and manner of operating, removing only such portions as is necessary to relieve the pressure or contact.

Case II.—The clergyman has had a full course of operative treatment, and a most satisfactory result. During the past year he has had no attack of asthma, no pharyngitis, laryngitis, or ringing in the ears; neither has he been bothered by repeated colds, nor a stuffed-up nose. In a conversation last week he told me that he could not estimate in money the benefit he had derived. The specimens I now show you I removed from his nose by the cold snare. As you will see, they are partly cystic in character, and of unusual size (see photograph).



Case III.—The young German continued his treatment until the symptoms complained of were relieved, the voice being fully restored. The shelf across left nostril was removed by the electro-trephine, consequently the pieces taken out were not saved, though I recollect that it was a common osseous growth about an inch long.

In conclusion, let me say that I have no doubt the notes of other specialists will show fully as good results as those I have mentioned, and I would respectfully ask the general practitioner to not pass over the articles in his journals relating to rhinology, otology, or laryngology, but stop and carefully read a few of them. If he does so, I think disparaging remarks made about the treatment of chronic catarrhal affections will be less frequent.

117 East Jefferson Street.

The Duke of Westminster, although he is a vice-president of St. George's Hospital, refuses, so it is reported, to let any of his houses in the West End of London to medical men, fearing that their presence will frighten away his fashionable tenants.

AN EARLY OVARIOTOMIST.

The younger, and most of the older, members of the profession in America have little conception of the violent opposition there was, fifty and even thirty years ago, to the performance of operations on the abdominal cavity. Those who undertook such operations in the face of almost universal condemnation did so with their reputations in their hands. They believed they were right and they had the courage of their convictions, but their courage was of no mean order, and entitles them to grateful recognition by posterity. We have all heard of McDowell and Rogers and the Atlees, but we doubt if the name of Dunlap is as familiar to our readers as it deserves to be.

At the recent meeting of the American Gynecological Association in Washington, Dr. J. C. Reeve read a most interesting memoir (New York *Journal of Gynæcology and Obstetrics*, June, 1894) of this pioneer ovariotomist, Dr. Alexander Dunlap, of Springfield, O., whose death, at the ripe old age of seventy-nine, occurred in January last. Dr. Dunlap was born in Ohio, received his education, both academic and medical, in that State, married there, practised there, and died there. He was not a cultured man in the ordinary acceptation of that term, nor were books his companions. He studied, as most men of his time were obliged to study, in the school of experience. He knew little of what his predecessors had done or his contemporaries were doing, but struck out new paths for himself, undeterred by the reprobation of others less original and less courageous, and, in his ignorance of what other great minds had conceived and executed, unencouraged by their success.

Dr. Dunlap's first ovariotomy was performed in 1843, and up to 1868 his cases numbered thirty eight. Of these nine had resulted fatally, one from an overdose of morphine administered by mistake. During his entire career he performed four hundred and twenty-eight abdominal sections, with eighty-three per cent. of recoveries.

His method of operating was primitive in the extreme. Dr. Reeve assisted him in some of his earlier cases, and the following are his words in describing them :

"Scalpel, forceps, and director were the only instruments provided. The abdomen was opened, the cyst exposed, then incised with the scalpel, and its contents caught in a wash-basin. Adhesions were separated as the cyst was withdrawn, or the incision was extended without hesitation in order to gain access to them. Bleeding from separated adhesions was checked by the application of cold water. In one case this was continued for twenty minutes and no evil results followed. In closing the wound the stitches were not passed through the peritoneum. The pedicle was transfixed with a ligature of heavy silk, each half tied separately, then one end carried around the whole and tied again ; one end was then cut short and the other brought out at the lower angle of the wound, there to hang until separated by process of ulceration. This always required weeks, sometimes many months. In the case of a girl, aged thirteen, operated on by the writer, where this plan was followed, more than a year elapsed before the ligature came away, and this in spite of all measures to hasten it. This mode of treatment of the pedicle seems very strange in view of the fact that in Dr. Dunlap's first case both ends of the ligature were cut short, the pedicle dropped back, and the wound closed. There is not the slightest probability that Dr. Dunlap knew, even as late as 1868, that this was the plan pursued by Nathan Smith, in 1821, the second operator in the United States, and by D. L. Rogers, of New York, the fourth, in 1829. It looks very much as if, after his first case, he informed himself as to the plan followed by McDowell and Atlee, and made this step backward under the influence of their example."

"The treatment received by Dr. Dunlap," says the author of this most interesting biographical sketch, "was of the same kind as that meted out to McDowell. The comments of the *Medico-Chirurgical Review* of London, then the leading journal of the world, upon his operation are well known : 'We entirely disbelieve that it has ever been performed with success—nor do we think it ever will!' The extent, the bitterness, the persistency of the opposition to ovariotomy, the denunciation of those who performed it, can scarcely be imagined now. It is recorded in the pages of Peaslee and of Atlee. Nor was this feeling confined to this country. Mr. Ernest Hart has recently told us that in London, during the first attempts at ovariotomy, Dr. Robert Lee, then the leading obstetrician, openly stated that he was watching for a fatal case that he might cause the operator to be legally prosecuted! He who now, after fifty years of service, would indicate the most striking contrast between the profession as it is to-day and as it was when he entered it, would not find that contrast in the possession of anæsthetics nor in the triumphs of abdominal surgery, where even ovariotomy has sunk to a position of minor importance ; but he would find it in the different spirit with which new doctrines, new measures, and new operations are received. The *Zeitgeist* of medicine has taken on an entirely different form from that of a generation ago."

THE DEVELOPMENT OF THE RAILWAY SURGEON.

The growth of the railway surgeon and of railway surgical service is, we believe, a feature of professional development peculiar to this country.

There are at present 147,704 miles of railways in the United States and Canada, and all but 17,088 miles are watched over, more or less, by surgeons in the employ of the corporations. The total number of railway surgeons is 5,466. The railways which possess a hospital system cover 36,751 miles ; railways with a relief service, 13,446 miles ; and railways with a surgical service and chief surgeon, 44,281 miles. There is a National Association of Railway Surgeons with a membership of 1,767 and an organ called *The Railway Surgeon*.

According to this journal there are over 120 chief surgeons, representing 82,032 miles of railway employing 3,384 surgeons, "all of which [*sic*] are working harmoniously under a chief surgeon, who in each instance has, to a greater or less extent, charge of the surgical department of the company he represents. We have great reason to rejoice and be glad and to congratulate this association on the work it has accomplished."

The Railway Surgeon admits that there are some who assert that there is no special field for railway surgery, which really cannot differ, so far as we can see, from any other surgery. We have also heard the complaint that

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Traitement des Rétrécissements par l'Électrolyse Linéaire. Par le Dr. J. A. Fort, Ancien Interne des Hôpitaux, Professeur Libre d'Anatomie à l'École Pratique de la Faculté de Médecine de Paris. Paris: G. Masson. 1894.

In this exhaustive treatise of five hundred and fifty pages Dr. Fort sums up all there is to say in favor of linear electrolysis as a cure for stricture. In an introductory chapter the author speaks of linear electrolysis in general, and in the fourth chapter describes the mode of performing it, the intervening chapters being devoted to a recital of one hundred and forty cases of urethral stricture treated by this method. The next chapter contains the histories of twenty-seven cases of complicated and irregular strictures, and the good results obtained by the author. The sixth chapter is devoted to a consideration of the dangers of internal urethrotomy, and in the final chapter are the résumés of several works bearing testimony to the utility of the author's procedure. In the second part Dr. Fort treats of linear electrolysis applied to the relief of strictures of the œsophagus, and reports a number of cases (upward of thirty) in which this method was successfully employed. This procedure has one great advantage over electrolysis as usually practised in this country, in that it is completed at a single sitting.

The Essentials of Chemical Physiology for the Use of Students. By W. D. Halliburton, M.D., F.R.S. Pp. 166. London: Longmans, Green & Co., 1893.

This book is written in order to supply the student with directions for examining practically the most important of the subjects included under the head of physiological chemistry. It is also intended to serve as an elementary text-book. It is well illustrated, and is more complete than most of so called "Essentials" published for the benefit of the student.

Outlines of Insanity, an Attempt to present in a Concise Form the Salient Features of Mental Disorder; Tabulated and Arranged for Facility of Reference when drawing up Lunacy Certificates. Designed for the Use of Medical Practitioners, Justices of the Peace, and Asylum Managers. By Francis Walmsley, M.D. Pp. 154. London: The Scientific Press (Limited). 1892.

The purpose of this work is indicated fully in its title. It is a short popular exposition of insanity. The author has fulfilled his task creditably, and the book is printed in excellent style.

Congenital Affections of the Heart. By George Carpenter, M.D., Member of the Royal College of Physicians, etc. London: John Bale & Sons.

The book under consideration is the embodiment in printed form of demonstrations on congenital malformations of the heart, found of service to a class of students who failed to find in ordinary text-books explanations sufficiently precise and clear. The history of twenty-two cases is given, all the theories as to cause are considered, and a very careful survey of normal embryonic cardiac development is an interesting feature. As a supplement to larger works, as those of Rokitansky, Kussmaul, Peacock, and others, this fills a distinct want.

Clinical Manual for the Study of Diseases of the Throat. By James Walker Downie, M.B., Fellow and Examiner in Aural Surgery for the Fellowship, of the Faculty of Physicians and Surgeons, etc. New York: Macmillan & Co. 1894.

For the use of students and practitioners, this manual is dictated in great part by personal experience, and divided into two sections. In the first systematic examination of the throat is discussed, together with the various manifestations of disease. In the second and larger section individual diseases are considered in detail, according to their importance and frequency of occurrence, and medicinal and surgical treatment. For a book of small size, immense ground is covered and the suggestions given are of practical value and utility.

Practical Lectures in Dermatology. By Condict W. Cutler, M.S., M.D., Professor of Dermatology, University of Vermont, etc. New York and London: G. P. Putnam's Sons. 1894.

The excuse for this work, not the reason of its existence, the author states in the preface to be the request of the students in the medical department of the University of Vermont to have the lectures delivered in 1892 and 1893 published for convenient and ready reference. Prepared from stenographic notes, the fifteen lectures are here given with substantial accuracy, and consider only those diseases of the skin which every practitioner is called upon to diagnosticate and treat in an intelligent manner. The work is plain and practical, and commends itself to any busy practitioner. And herein lies its "reason for being," which needs no excuse.

Die Behandlung der Leukaemie. Kritische Studie Von Dr. H. Vehsemeyer. Berlin: S. Karger. 1894.

In this brochure the author presents a very exhaustive review of the various measures which have been tried with more or less success in the treatment of leucocythæmia. Dr. Vehsemeyer himself has had such good results in one case treated with the fluid extract of barberry, that he thinks this drug, or its alkaloid, berberine, should be given a further trial.

A Modern Wizard. By Rodrigues Ottolengui. G. P. Putnam's Sons, New York and London. 1894.

This is a story of medical art and crime; of murder and the workings of the law; of self-interest, detectives, and hypnotism; of pride, vain-glory, and hypocrisy; of climax, anti-climax, and finally life in-death by "sanatoxine," a deft preparation kept on hand by the unscrupulous hero to deprive himself of reason in order to escape the just punishment of his manifold misdeeds. Dr. Medjora, Spanish and beautiful, fascinating and mysterious, is left a raving maniac on the last page, after having disposed of one or two wives according to scientific methods, and been the prime mover in many schemes for his own aggrandizement. The "Modern Wizard" is intensely interesting, sometimes dramatic, and well written at intervals. It leaves the reader breathless and in a mixed frame of mind: why should an author of so much ability write such a book, and why should a reader of such intelligence read it? This question each must answer for himself.

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Traitement des Rétrécissements par l'Électrolyse Linéaire. Par le Dr. J. A. Fort, Ancien Interne des Hôpitaux, Professeur Libre d'Anatomie à l'École Pratique de la Faculté de Médecine de Paris. Paris: G. Masson. 1894.

In this exhaustive treatise of five hundred and fifty pages Dr. Fort sums up all there is to say in favor of linear electrolysis as a cure for stricture. In an introductory chapter the author speaks of linear electrolysis in general, and in the fourth chapter describes the mode of performing it, the intervening chapters being devoted to a recital of one hundred and forty cases of urethral stricture treated by this method. The next chapter contains the histories of twenty-seven cases of complicated and irregular strictures, and the good results obtained by the author. The sixth chapter is devoted to a consideration of the dangers of internal urethrotomy, and in the final chapter are the résumés of several works bearing testimony to the utility of the author's procedure. In the second part Dr. Fort treats of linear electrolysis applied to the relief of strictures of the œsophagus, and reports a number of cases (upward of thirty) in which this method was successfully employed. This procedure has one great advantage over electrolysis as usually practised in this country, in that it is completed at a single sitting.

The Essentials of Chemical Physiology for the Use of Students. By W. D. Halliburton, M.D., F.R.S. Pp. 166. London: Longmans, Green & Co., 1893.

This book is written in order to supply the student with directions for examining practically the most important of the subjects included under the head of physiological chemistry. It is also intended to serve as an elementary text-book. It is well illustrated, and is more complete than most of so called "Essentials" published for the benefit of the student.

Outlines of Insanity, an Attempt to present in a Concise Form the Salient Features of Mental Disorder; Tabulated and Arranged for Facility of Reference when drawing up Lunacy Certificates. Designed for the Use of Medical Practitioners, Justices of the Peace, and Asylum Managers. By Francis Walmsley, M.D. Pp. 154. London: The Scientific Press (Limited). 1892.

The purpose of this work is indicated fully in its title. It is a short popular exposition of insanity. The author has fulfilled his task creditably, and the book is printed in excellent style.

Congenital Affections of the Heart. By George Carpenter, M.D., Member of the Royal College of Physicians, etc. London: John Bale & Sons.

The book under consideration is the embodiment in printed form of demonstrations on congenital malformations of the heart, found of service to a class of students who failed to find in ordinary text-books explanations sufficiently precise and clear. The history of twenty-two cases is given, all the theories as to cause are considered, and a very careful survey of normal embryonic cardiac development is an interesting feature. As a supplement to larger works, as those of Rokitansky, Kussmaul, Peacock, and others, this fills a distinct want.

Clinical Manual for the Study of Diseases of the Throat. By James Walker Downie, M.B., Fellow and Examiner in Aural Surgery for the Fellowship, of the Faculty of Physicians and Surgeons, etc. New York: Macmillan & Co. 1894.

For the use of students and practitioners, this manual is dictated in great part by personal experience, and divided into two sections. In the first systematic examination of the throat is discussed, together with the various manifestations of disease. In the second and larger section individual diseases are considered in detail, according to their importance and frequency of occurrence, and medicinal and surgical treatment. For a book of small size, immense ground is covered and the suggestions given are of practical value and utility.

Practical Lectures in Dermatology. By Condict W. Cutler, M.S., M.D., Professor of Dermatology, University of Vermont, etc. New York and London: G. P. Putnam's Sons. 1894.

The excuse for this work, not the reason of its existence, the author states in the preface to be the request of the students in the medical department of the University of Vermont to have the lectures delivered in 1892 and 1893 published for convenient and ready reference. Prepared from stenographic notes, the fifteen lectures are here given with substantial accuracy, and consider only those diseases of the skin which every practitioner is called upon to diagnosticate and treat in an intelligent manner. The work is plain and practical, and commends itself to any busy practitioner. And herein lies its "reason for being," which needs no excuse.

Die Behandlung der Leukaemie. Kritische Studie Von Dr. H. Vehsemeyer. Berlin: S. Karger. 1894.

In this brochure the author presents a very exhaustive review of the various measures which have been tried with more or less success in the treatment of leucocythæmia. Dr. Vehsemeyer himself has had such good results in one case treated with the fluid extract of barberry, that he thinks this drug, or its alkaloid, berberine, should be given a further trial.

A Modern Wizard. By Rodrigues Ottolengui. G. P. Putnam's Sons, New York and London. 1894.

This is a story of medical art and crime; of murder and the workings of the law; of self-interest, detectives, and hypnotism; of pride, vain-glory, and hypocrisy; of climax, anti-climax, and finally life in-death by "sanatoxine," a deft preparation kept on hand by the unscrupulous hero to deprive himself of reason in order to escape the just punishment of his manifold misdeeds. Dr. Medjora, Spanish and beautiful, fascinating and mysterious, is left a raving maniac on the last page, after having disposed of one or two wives according to scientific methods, and been the prime mover in many schemes for his own aggrandizement. The "Modern Wizard" is intensely interesting, sometimes dramatic, and well written at intervals. It leaves the reader breathless and in a mixed frame of mind: why should an author of so much ability write such a book, and why should a reader of such intelligence read it? This question each must answer for himself.

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SURGEON-MAJOR INCE then moved "That this meeting regrets the great and growing increase in the annual expenditure, as compared with the income of the Association; and suggests to the Council the expediency of a careful and substantial reduction thereof in all departments, especially in the matter of the editorial and office expenses, which appear out of all proportion to the needs and nature of the *British Medical Journal*." The Treasurer replied to the point raised in relation to the finances and regretted the personal allusions, maintaining that the editor had raised the *Journal* to the position of one of the best medical periodicals in the world. The editor also replied, maintaining that he had always endeavored to be impartial. He congratulated Surgeon Major Ince for contributing to the gayety of the meeting, and left the audience to judge whether he had given an example of the self-effacement he wished to apply to the editor.

DR. INCE said his object had been served by the discussion and he would withdraw the resolution.

MR. R. W. DOYNE, representing the Oxford Branch, moved an amendment to the report regretting that it contained no reference to the question of Medical Aid Associations, which had done so much injury by sweating members of the profession. The amendment was seconded by DR. MEAD, who said that very cruel cases had come before him as Secretary of the Medical Protection Association.

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After some further discussion the resolution was put and carried by a majority of thirty four to thirteen, this being the total present, and the report as amended was then adopted.

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The President read out a list of visitors to the conference from various parts of the world, and also mentioned that representatives were present from many colonial Branches.

Dr. Ward Cousins stated that the Council received that morning a very large metropolitan deputation, headed by Dr. Russell Reynolds, inviting the Association to London for its next annual Congress. The Council recommended that they should accept the invitation, and he need not tell them that the Council would do all in their power to help the development of the meeting so as to give entire satisfaction, not only to the whole Association, but to their metropolitan associates. It would be a great satisfaction to know that they had selected as the President the President of the Royal College of Physicians. He moved that the invitation to hold the annual meeting for 1895 in London be accepted, and that Dr. Russell Reynolds be nominated as the President-elect. The President seconded, remarking he need hardly say they could not have a better President-elect, or a better place to meet in than London.

The Address in Medicine was then delivered by Sir Thomas Grainger Stewart, M D., Professor of Medicine in the University of Edinburgh, who said he did not propose to give an address on the general subject of medicine, but would select one special disease which had been much talked about among us of late, namely, the influenza, which, however, was no new epidemic, for Randolph, the ambassador from Queen Elizabeth to the Queen of Scots, described it accurately in a letter to "Her Grace" It was called "the new acquaintance," because it visited everybody. There were three types of the disease, the respiratory, the intestinal, and the nervous, while its complications and sequelæ were numerous. Some of the latter were purpura hæmorrhagica, vomiting, anæmia, gout, diabetes, cardiac symptoms, dropsy, pneumonia, phthisis, skin eruptions, sweating, affections of the urinary and reproductive systems, albuminuria hæmaturia, inflammatory symptoms as cystitis, and especially nervous, involving sight, hearing, and smell, sometimes increasing the power of these senses, but more usually decreasing them. We had considerably increased our knowledge of the histology of the disease. It had one essential cause, the Pfeifferian bacillus, which was always present and was never found in any other complaint. The result of inoculation with the cultivated virus was unsatisfactory, for no animal, except man, was affected by this micro organism, not even the monkey.

This bacillus will only live in the presence of hæmatoglobin. It does mischief in many ways, but chiefly by means of the poisonous products it sets up in the system. Possibly it provided a nidus in which other poisons found a chance of ready development at a time when the power of resistance of the patient was diminished, for exhaustion favors the growth of micro-organisms. Some white rats were inoculated with the bacillus of anthrat, half their number were placed in a cage and forced to work the tread-mill, the others were allowed to rest; the former developed the disease, the latter escaped.

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Dr. F. Roberts proposed, and Dr. Shingleton Smith seconded, a vote of thanks to the lecturer, the former declaring that he was deeply interested by the assurance that the bacillus will not live in, and cannot be propagated by, water; he also congratulated him upon the honor the Queen had bestowed upon him.

Sir T. G. Stewart, in replying, said there was an old Scotch proverb to the effect that the best mirror is the eye of a friend.

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Dr. Ward Cousins explained that the prize was £50 interest on a sum of money left by the late Mr. R. Middlemore, of Birmingham, for the best essay on any subject in ophthalmology, medicine, or surgery.

Third Day, Thursday, August 2d.

Address in Surgery.—Mr. Greig Smith, Professor of Surgery in the University College, Bristol, then delivered the address in surgery, taking as his subject, "The Art of the Surgeon."

After gracefully acknowledging the honor paid to Bristol and himself in his selection for this duty he said

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Dr. Ward Cousins explained that the prize was £50 interest on a sum of money left by the late Mr. R. Middlemore, of Birmingham, for the best essay on any subject in ophthalmology, medicine, or surgery.

Third Day, Thursday, August 2d.

Address in Surgery.—Mr. Greig Smith, Professor of Surgery in the University College, Bristol, then delivered the address in surgery, taking as his subject, "The Art of the Surgeon."

After gracefully acknowledging the honor paid to Bristol and himself in his selection for this duty he said

that former orators had chosen to sing pæans on our victories over science and glorified scientific heroes It was his intention on this occasion to leave science alone and deal with the art, and how we trained men to practise it. What was a surgeon? A stranger might judge from a study of door plates that there was no difficulty in answering; but the word "Surgeon" on a door usually meant that its possessor was capable of all branches of the healing art except surgery. The surgeon in these days of high-sounding titles was almost alone in following a craft called "handwork" whose title was needlessly humble.

The surgeon was first and foremost a physician. In person or by proxy he must lean on medicine. Besides medical training he must have special education in his handicraft. In old times the surgeon was the slave of the physician, later his enemy, to day his equal and helper. Their rivalry was now a goodly and a wholesome one. Among other arts and crafts surgery was unique in the breadth of its foundation on science. A surgeon must know something of all the sciences, a good deal of a few, and everything of two or three.

Was all our display of knowledge genuine? Examiners seemed to have their doubts, so fearful were they apparently that the student's knowledge might trickle away unless he were annually examined. When was the importation of new subjects into the curriculum to stop? The burden was becoming steadily heavier to bear. Should we cast off some of it as cumbersome or useless? Some said that we have too much anatomy, that it is useless to the practical surgeon, and that physiology was unstable and uncertain, that the young physiologist gives a dose of castor-oil, on much the same principles that his grandmother acted on. Pathology they said was the science of too late. These men were as honest as their opponents. From that very rostrum their views had been proclaimed. He ventured to differ. If asked, "Are we to lower surgery so that brains may not be strained?" he would answer, "Let surgery rise if brains fall!" He would not cast away anything, but he would select, rearrange, and raise, and have more anatomy, physiology, and more pathology.

The end of culture for the multitude seemed to be to nibble at science, dabble at art, and drivel over the glorious advances of the century. Surgery tolerated no dawdling or dilletanteism. The surgeon's knowledge must be real and thorough and practical, and he must carry it with him. He must have the real knowledge of the artist begotten of personal labor and not of cribs and mnemonics. That surgeon's armor was weakest at vulnerable points who was not protected by a complete panoply of anatomical knowledge. The complete surgeon must not cease to learn anatomy in his lifetime. Only the other day the attention devoted to the vermiform appendix had rendered our knowledge of its anatomy more perfect. Centuries of observation by the morphologist were not equal for our purposes to the few months' work of the practical surgeon. No honest surgeon dare let himself remain ignorant of any new pathological or physiological fact that might bear on his work. Bacteriology was of supreme importance, and we dare not stop anywhere in our studies so long as knowledge advanced.

There was real danger that the claims of science might injure the art of surgery. It was a pity that science should so often kill art. Certainly in surgery there was no reason for this, but science and art could flourish together.

The art of the surgeon might be viewed from two aspects; one side might be called mechanical, the other was closely allied to a fine art. Easily learnt as the mechanical side was it was worthy of being taught, and it would be good for most surgeons to spend a month or two in a mechanic's workshop. In respect of technical skill in handling, he would place surgeon's tools on a level with the sculptor's spatula or chisel, or only a little higher—they were mere accessories in the work of the brain-compelled hands.

The other side of the craft he would venture to compare with that which produced works of art. This side was far the most important. The highest part of surgical fine art—for surgery was nothing less—was braincraft uttered through the fingers, not mere dexterity or cunning. The finger-surgeon began at the wrong end, he ought to have been a button maker. The important sense of touch—the only one in which man excelled the lower animals—was trained through the intellect as much as the fingers, and was aided by other senses, especially sight.

There were no limits to the demands made on the surgeon's tactile powers. Touch to the surgeon was what hearing was to the physician. But it was always the intellect that interpreted. It was as true now as twenty centuries ago that "'Tis mind that sees and mind that hears; all other things are deaf and blind."

The sculptor and the surgeon both dealt with the human body. Each art demanded from its votaries absolute fidelity to form; ignorance led to grief in both. Their ways of working were also alike. In each the true artist went as far as necessary at once without trifling. The surgeon who was not an artist was good at some details, but not in all, and lacked a sense of true proportion.

The world lost a great surgeon in Leonardo da Vinci, and a great artist in Sir Charles Bell. What was the teaching of this art of surgery? There was no real teaching of the art of surgery in this country. We had to teach ourselves by experience alone. The young sculptor might with impunity make and break figures, but the young surgeon was not supposed to damage or destroy human beings.

Artist and craftsmen learnt their work with a master to correct their faults. Surgeons alone were unassisted in this way in their art, although in his science the student had guidance enough. Operative surgery on the dead body was useful and indispensable, but it was only a step toward operating. The art must be taught to the young surgeon while actually operating, and his mistakes pointed out and his successes commended. What would they not give now to have a Liston or a Syme at their elbows to teach them? To imagine Liston, trained as he was in the cruel and exacting school of preanæsthetic days, having before him our science was to realize the ideal surgeon-artist.

Apprenticeship or pupilage would do something for surgery, but we needed personal teaching in high art by competent masters, as was done in medicine and obstetrics.

The state would only help those who helped themselves. Let us do so, and we might one day seek for a Royal Academy of Surgery, and a school with teachers attached.

One of the great surgeons of five hundred years ago and more wrote, "Knowledge is created by additions, the same man cannot lay the foundation and perfect the superstructure. We are as children carried on the neck of a giant; aided by the labors of our predecessors we see all that they have seen and something beyond." Let us in our love for the new science not forget the old art. Let us graft our new truths on the old stock that they may long live and flourish.

Mr. Reginald Harrison moved a vote of thanks to Professor Greig Smith for his interesting address, and said the resolution only inadequately expressed the indebtedness of the Association.

Mr. Nelson Dobson, of Clifton, in seconding the resolution, said it was a peculiar privilege to do so on that occasion of a large assembly thanking his neighbor and friend. He further expressed the gratification of his brethren who practised in the neighborhood that one of them should have been chosen for this honorable distinction. The good old city of Bristol, he said, had made the name of Smith famous in surgical history: 'Dick' Smith and "Nat" Smith were familiar names until the present day, and he believed that Greig Smith would

also be remembered not only for his great achievements in surgery, but for the address he had just delivered.

The resolution was carried by acclamation, and briefly acknowledged by the Professor.

Most of the audience then dispersed, leaving only a few members to transact the formal business, which was at once entered upon.

This included the adoption of the Reports of the Scientific Grants Committee, of the Committee on Legislation for Inebriates, of the Therapeutic Committee, of the Medical Charities Committee, of the Committee on the Efficient Control of Railway Servants' and Mariners' Eyesight, of the Committee on the Examination of School Board Children, and of the Anæsthetics Committee.

(To be Continued.)

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, April 16, 1894.

SAMUEL B. W. MCLEOD, M.D., PRESIDENT, IN THE CHAIR.

The Paper Jacket, its History, and Applications.—DR. J. MARSHALL HAWKES read a paper upon this subject, and presented about a dozen illustrative cases. Since Ambrose Paré, in 1725, made his first jacket out of beaten brass, the ingenuity of many men had been devoted to the production of a jacket from material which should possess among other desirable qualities that of lightness. Wood, woven wire, plaster of Paris, and various other materials had been employed, but all were heavy with the exception of felt, and this was objectionable because of its thickness, tendency to break down, and to absorb the perspiration. Plaster was not only heavy, but it disintegrated, absorbed the perspiratory products, became offensive, was cumbersome, broke down, and became useless.

Dr. Hawkes came to make the paper jacket, after trying nearly all possible materials, in a case of injury to the vertebral column in 1887. He was unable to adapt a jacket which the patient could wear without undue suffering, until the use of paper was suggested by seeing some workmen making buckets of this material. He then suspended a patient, made a plaster mould on the nude body, and from this mould made a solid plaster cast, over which he constructed the paper jacket out of the best manilla paper. Successive layers of paper were put on and made to adhere by varnish, shellac, and various cement materials, until a thickness of about three thirty-seconds of an inch was obtained. The weight was scarcely fourteen ounces. According to the deformity to be treated, he padded the plaster cast at projecting points and cut it down at others on the opposite side, so that in time pressure reduced the projecting deformity and filled up the opposite cavity in the body of the growing subject. When the jacket was removed it was replaced during suspension. Many persons, especially girls, who refused to wear the plaster and other jackets or apparatus because of their clumsiness and weight, submitted to the application of the paper jacket early and with pleasure, because of its lightness, accurate fit, as if it were a corset, and because of the marked comfort which it afforded. It was well known that the weight of the jurymast or other support attached to the plaster jacket tended to break it down. The paper jacket being very strong, easily withstood the strain. Dr. Hawkes knew of no disease of the spinal column to which it was not applicable. It was important that it extend well down over the hip, say to the inferior spinous process, else the superincumbent weight of the body would cause pressure pain along the lower border. The importance of a snug, light, well-fitting, strong jacket, the wearing of which would not be objectionable to the most fastidious patient, was shown by the fact than an eminent surgeon had estimated that four per cent. of the population had some defect of the spinal column. Among the patients shown by the author were some of sensitive spine in neurotic subjects, railroad spine, and deformities from other injuries, lateral curvature, etc. None with Pott's disease happened to be present.

DR. A. B. JUDSON being requested to open the discussion, said: The management of these cases is the cause of anxiety, because the patient and his friends do not readily recognize the difference between lateral curvature, which may persist without interfering with a long and useful life, and Pott's disease, which is a destructive process in itself and exposes the patient to the risk of abscesses, paraplegia, greatly reduced stature, and serious deformity. The apparatus shown is admirable and of value in the treatment of certain cases, but in Pott's disease I would prefer an apparatus which enables us to apply adjusted and regulated pressure directly to the projection in an antero-posterior direction. Pott's disease is, with the exception of malignant disease, the most serious affection which can attack the skeleton. In itself the morbid process is curable, as is seen when it occurs in the ankle, the knee, and the hip. It is noticeable that the disease is more manageable in the smaller joints, evidently for a mechanical reason. The muscles are more able to arrest motion, and fixative apparatus is more efficient if the portion of the body lying beyond the diseased joint is of small size. If the hip joint or the spinal joints are in the acute stage of disease they are unavoidably disturbed by motions in other parts of the body, but a digital joint, for instance, may easily be kept motionless and undisturbed while violent motions are made in other parts of the body. It is this mechanical disadvantage, suffered by the carious vertebræ, which makes this disease almost malignant in its persistence. With this in view we must admire the zeal which Dr. Hawkes has infused into his work. In this way alone can the details, which are so large a part of all orthopedic work, be properly attended to. In fact the personal element is as important as the selection of a form of apparatus.

DR. VON DONHOFF thought the claims made for the paper jacket were well based. So far as scoliosis was concerned, there was a tendency for it to go on increasing in spite of mechanical treatment until nature arrested it. He thought Dr. Vance, of Louisville, was first to use the suspension apparatus. Dr. von Donhoff had come to regard suspension as dangerous, and therefore applied the jacket on a kind of hammock, in the horizontal position. He believed he had himself first used paper, 1874 or 1875.

DR. NEWLAND expressed the opinion that the more nearly one left the patient alone the greater would be his success in the treatment of curvature of the spine. Where a brace was called for the paper jacket would prove useful, but it lacked some of the advantages pertaining to aluminum.

DR. MILLIKEN preferred the iron brace, but since patients could not always be seen frequently, the plaster jacket had found a place. If one could prevent further deformity he would do well. He thought Dr. Bryan, a former Bellevue interne, first used plaster in this country. He preferred putting on jackets in the horizontal position.

DR. BROTHERS thought aluminum wire would come to be used for jackets in preference to other material.

DR. JUDSON remarked that Dr. Benjamin Lee, of Philadelphia, had used suspension before the date mentioned by Dr. von Donoff as the time when Dr. Vance first employed it, and Dr. Lee said he got the idea from Dr. John K. Mitchell, of Philadelphia.

DR. HAWKES said, in closing, that he would not put an iron brace on a child under any circumstances. He did not believe any extension of the spine could be got by placing the patient in the horizontal position. He had never seen danger or injury from suspension. That actual diminution of deformity had been effected was shown by the successive casts.

To say to a patient that her only hope lay in nature arresting further progress of the deformity, and then ask for a fee, reminded him of a picture in a comical paper, representing a bruised and dilapidated individual in the presence of a soothsayer who, having read in his past history that he had met with some accident, and predicted that he was to fall heir to a hundred thousand dol-

lars, extended his hand with the remark, "Two dollars, please."

Quinine Amaurosis.—Dr. J. Herbert Claiborne read a paper in which he described a case of quinine amaurosis, mentioned the rarity of the affection and the symptoms usually accompanying the condition. There were about fifty-five cases on record. His own case was seen with his father in the South. The eyes were examined also by Dr. Knapp. The man had been taking considerable quinine, and on one occasion, in order to prevent recurrence of symptoms and assure rest, he swallowed nearly a handful of two-grain quinine pills. Following which was blindness which had persisted since, or about three years. There had been only sufficient improvement to enable the patient to see slightly by reflected light, less well by direct or strong light.

The author reached the following conclusions with regard to quinine amaurosis: 1, Quinine in toxic doses may produce blindness; 2, the toxic dose is distinctly indeterminate; 3, the duration of the amaurosis varies greatly; 4, the field of vision remains contracted; 5, the central vision usually returns to normal; 6. there is color-blindness at first, color perception being ultimately restored in the central field; 7, the ophthalmoscopic picture is that of white atrophy; 8, experiments on dogs show that there is atrophy of the entire optic tract; 9, the same experiments show that the cells of the cuneus are probably not affected; 10, treatment is of no avail.

Dr. Claiborne's case was the severest on record. The trouble with hearing had quite disappeared.

The discussion was participated in by Drs. Hepburn, Van Fleet, Meeks, and the author. Dr. Hepburn thought the most curious point in the case related was better perception of light by reflected than by direct light. The affection seemed to be peripheral, but whether the toxic agent acted directly upon the nerve or through the circulatory system was a question.

Ligation of Uterine Artery for Control of Hemorrhage in Tumors.—Dr. A. H. Goelet presented certain gynecological instruments, and illustrated by drawing ligation of the circular artery of the uterus for control of hemorrhage due to tumors of the uterus, after the manner practised by Martin, of Chicago. Dr. Goelet thought he had done this operation before Dr. Martin.

The only danger was in tying the ureter and in sepsis. Confinement was from one to two weeks.

Special Committee to State Constitutional Convention.—On motion of Dr. Frank Ferguson, the President was empowered to appoint a special committee of five to act with like committees appointed by other medical societies, for the purpose of looking after matters medical before the approaching State Constitutional Convention.

Dr. Charles J. Proben presented a specimen of tubercular dachtylitis, Dr. Biggs having confirmed the diagnosis; also a specimen of broncho-pneumonia from a child.

Stated Meeting, May 21, 1894.

Samuel B. W. McLeod, M.D., President, in the Chair.

The Medical Department of the National Guard, its Status in Two Decades.—Dr. Joseph D. Bryant, Surgeon-General of the National Guard of the State of New York, spoke of the status of the medical department ten years before and ten years since 1884. The National Guard was composed of the military and naval service, all told of about fourteen thousand men, fifteen thousand being the legal limit. There were about five thousand men in New York City, three thousand in Brooklyn, twenty-five hundred in Albany and the country towns, and about the same number in Buffalo and surrounding counties. The National Guard served two important purposes, viz.: to serve the State in case of riots, and to form the nucleus of an army in case of war. The naval reserves numbered four or five hundred. The men enlisted for five years and drilled once a week for seven months a year.

Medical Department.—This was made up of the surgeon-general, surgeons major, and assistant surgeons of the rank of captain or lieutenant, in all about ninety medical men. Then there was a hospital corps of instructed non-medical men, and hospital stewards, numbering about one hundred and fifty-six men.

Briefly stated, the duties of the medical officers during ten years, prior to 1884, were simply to appear on dress parade and to add to the social enjoyment of the officers at whose pleasure they were appointed. They signed papers in a perfunctory way.

A change has been effected since 1884, and to day the duties of the medical officers, from the surgeon-general down, were much more onerous. Scrutiny was not exercised in the appointments, and while the commanding officer could name a doctor whom he would like to have appointed his power ended there. Those selected had to appear before a medical examining board, and not a few of them had failed to pass the examination. The approval of the surgeon-general was requisite after the candidate had been recommended by the examining board. Their duties, when appointed, were medical and educational. They had to examine every recruit and to look after the health of the troops. The educational duties were to give instruction to the hospital corps in the matter of giving first aid to the injured, etc. The hospital stewards were formerly undertakers, butchers, etc., while to-day they were required to be educated in pharmacy. Formerly there was no regular hospital or ambulance corps, men acting only for the occasion, while at present a certain number were appointed for this position for the whole period of five years, and received special instruction in the care of the wounded. At the end of the period, if they passed the examination, they were given a certificate and two badges, one being that of the Red Cross.

They had thus built up in this State, as had been done in a few others, a complete system corresponding to that in the regular army.

After some remarks upon Dr. Bryant's paper by Drs. N. H. Henry, A. M. Jacobus, Brothers, and the author, the Society listened to the reading of the second paper of the evening, by Dr. John G. Coyle, on

Membranous Enteritis, with Report of a Case.—Dr. Coyle had found few cases reported, but believed the condition was often overlooked because of neglect to examine the stools. No fibres were found in the discharged membrane, it differing from diphtheritic enteritis in that regard. Some patients passed yards of membrane resembling tape-worm, for which it had sometimes been mistaken. The disease was chronic, attacks coming on for slight cause in those who were susceptible. The treatment related to diet, cleanliness by rectal enemata, and catharsis as might be indicated. There was little fever. His own patient was a woman, thirty-five years of age, who had at times suffered from great distention and rumbling in the abdomen, severe abdominal pains at the time of the attacks, headache, etc. The condition probably dated from 1885, since which time she had had attacks of dysentery, but membrane was discovered only the past year, when Dr. Coyle began to examine the stools, and since that time there had been discharge of non-fibrous membrane in three attacks.

Dr. Gessner Harrison had seen one case of membranous enteritis in a patient who supposed the cast was part of a tape-worm and brought it to him. She said her brother had been troubled in the same way.

In some closing remarks Dr. Coyle dwelt upon the importance of carefully examining the stools in gastro-intestinal troubles, just as one would examine the urine in suspected renal disease.

Dr. T. H. Manley reported as delegate to the International Medical Congress which recently met at Rome. He pronounced the meeting a success, scientifically and socially.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting April 11, 1894

GEORGE C. FREEBORN, M.D., PRESIDENT, IN THE CHAIR.

Carbolic Acid Poisoning.—DR. H. P. LOOMIS presented the following: A man was taken suddenly ill on the street and died before the ambulance reached him. The autopsy showed that death was due to carbolic acid poisoning. The specimens showed very well the extreme congestion and corrosion of the larynx and œsophagus. The tissues were very well preserved, although they had been kept in a cool place for about one week without any special preservative fluid.

Abscess of the Brain.—W. J——, thirty four years of age, was admitted to Bellevue Hospital in a somewhat stupid condition. He answered all questions in a loud voice. He had been complaining for two months previously of pain in the right side of the head and in the right ear, and there had been a discharge of pus from this ear for a short time, but it had ceased before his admission to the hospital. The day after admission he suddenly developed paralysis on the left side, which was more marked in the left arm. After a few hours the stupor became profound, and he died the following day. At no time was his temperature over 99° F. A diagnosis was not made during life. On removing the brain there was a peculiar yellowish appearance, but no evidence of an abscess until the brain was cut open. The brain, with the exception of an abscess in the temporal lobe on the right side, was normal, as were also the other organs of the body. The abscess in the temporal lobe was marked by a cavity about an inch and a half in diameter, and this cavity was filled with thick, greenish pus. The bones of the ear were cut open, and in the mastoid cells and the petrous portion of the temporal bone collections of pus were found. There was no meningitis—in other words, no extension by continuity. The sinus was thoroughly examined, but no thrombus was found. Cultures were made only from the abscess, and these showed the presence of the staphylococcus albus, the cladothrix, the bacillus liquefaciens, and a diplococcus resembling Fränkel's, but its exact character had not been positively determined.

Perforation of the Œsophagus of a "Sword swallower."—DR. LOOMIS also exhibited the diaphragm, œsophagus, and stomach from a man, thirty nine years of age, who had died within half an hour after admission to Bellevue Hospital. At the autopsy, on removing the sternum, the left pleural cavity was found to contain a large amount of dark liquid with little oil globules floating on top, and masses of what appeared to be fecal matter floating in it. The lung was compressed against the spinal column, and the heart was pushed over to the middle line. There was an odor of acetic and butyric acids in the liquid. Thinking that possibly the intestine had ruptured through the diaphragm and had become strangulated, it was next dissected out, and was found to be free throughout its entire extent. The diaphragm was then examined and found intact. The lung was next carefully removed, and was found to be completely atalectatic. After careful search it was found that the little finger could be passed into the left side of the œsophagus a little above the diaphragm; in other words, there had been a perforation of the œsophagus, leaving a clean cut, linear opening, 2 ctm. in length, extending down to the œsophageal opening in the diaphragm. There was no evidence of ulceration or infiltration. On examining the cardiac end of the stomach radiating lines were found around the œsophageal opening, which seemed to have resulted from injury. All three inner coats were gone, and the peritoneum laid bare. No other part of the stomach or œsophagus was injured in any way, and careful search throughout the entire alimentary tract failed to reveal the presence of any sharp pointed or sharp-edged body; in fact, no foreign body of any description was found. Subsequent inquiry showed that this man had been a sword-swallower, and had been performing almost up to the day of his death. Probably the injury had been inflicted by a sword.

Diverticula of the Sigmoid Flexure of the Colon.—DR. GEORGE P. BIGGS presented the specimen. It was removed from a woman, fifty five years of age, who died of chronic tuberculosis, chronic diffuse nephritis, and cirrhosis of the liver. About two inches above the brim of the pelvis there was a hard mass in the posterior wall of the sigmoid flexure of the colon, and on cutting into this from the outer surface a pocket was exposed which contained nearly one drachm of thick yellowish pus. It measured 2 ctm. × 1 ctm., the longer measurement corresponding with the axis of the gut. The tissues around this were distinctly indurated, although there was no localized peritonitis, the inflammation being entirely in the adipose tissue surrounding the sigmoid flexure. After some difficulty a small probe was passed through a small opening into the lumen of the gut. There were a number of other diverticula.

This condition of multiple diverticula in the colon, especially in the lower portion, would be found not to be uncommon, the speaker said, if careful search were made for it. These diverticula generally contained fecal matter. He had never before seen them inflamed as in this case, although there was no special reason why this should not occur.

DR. JAMES EWING said that he had recently seen two cases of anæmic colitis with marked ulceration, in which all the normal diverticula of the sigmoid flexure for about one foot were much dilated, so that they were capable of holding two or three drachms of fluid. They were not, however, inflamed.

Diphtheria and Pseudo-diphtheria Bacilli.—DR. WILLIAM H. PARK presented cultures and cover-glass "smears" of a number of varieties of diphtheria and pseudo diphtheria bacilli, and briefly alluded to the views that had been held by bacteriologists regarding the nature of these bacilli.

In 1888 Hofmann published the results of some investigations in which he stated that besides finding the diphtheria bacilli in cases of true diphtheria, he had found them in twenty-six out of forty five throats in which no diphtheria had existed. Some of these bacilli were shorter, thicker, and more regular in form than the Loeffler bacilli, and grew more readily on agar, the growth being both more luxuriant and whiter. Others, however, were in all respects identical with the Loeffler bacillus except that those from healthy throats were not virulent. He did not feel able to state whether or not these two forms were identical with the virulent diphtheria bacilli of Loeffler, or a different form of bacteria. Loeffler himself, and most German writers have considered them to be altogether a different form of bacteria, while Roux and Yersin, most Frenchmen, and some Germans have looked upon them as identical. Roux and Yersin in their studies on diphtheria gave careful attention to the relationship of the so called pseudo-diphtheria bacillus to the true one. The majority of the bacilli they studied were identical with the Loeffler diphtheria bacillus in growth, size, and form, and differed simply in not possessing virulence. Exceptionally they found bacilli which were shorter, grew somewhat more luxuriantly on agar and in broth, and at a somewhat lower temperature (20°–22° C.) than the true diphtheria bacillus. This latter quality was sometimes only acquired after the bacilli had grown some generations on artificial media. The changes in reaction in bouillon caused by the growth of the bacilli were the same as in the case of true bacilli, but change to acid, and later return to alkaline reaction was more rapid. It was noted that the non virulent bacilli were only present in small numbers in the throats, so that the serum tubes usually contained but one to four colonies.

In a hospital for children in Paris, where cases of diphtheria were occurring from time to time, cultures were made from forty-five throats, and non-virulent bacilli found in fifteen. In a village in France, by the

coast, where no diphtheria had been present for a long time, cultures were made from the throats of fifty nine children living in a school, and in twenty six of these non-virulent bacilli were found. In an examination of ten throats of attendants in a diphtheria hospital non-virulent bacilli were found once. Therefore in one hundred and fourteen healthy throats the bacilli were found seventy-two times. From these experiments they concluded that a bacillus similar in all essential characteristics with the diphtheria bacillus, except for its lack of virulence, was a fairly common inhabitant of the healthy throat.

With regard to its frequency in disease, it was noted twice in six children with mild sore throats, and five times in the throats of seven children in which the sore throat was complicated with measles. They found that the cultures of true cases of diphtheria could be distinguished from those from healthy and diseased throats by the fact that the cultures from true diphtheria contained a great number of colonies of the bacilli, while those in which non-virulent bacilli were present the colonies were very few, there never being more than from one to four present in one tube. This would be a valuable practical guide if it were only true.

The connection between the most virulent and the non-virulent bacilli is shown by the gradations in virulence of diphtheria bacilli. As a rule, the more severe the case the more virulent the bacilli were found to be. In cases which recover, the bacilli become less and less virulent as convalescence progresses. It has been found that throats recently the seat of diphtheria were more apt to contain the non virulent bacilli than were other throats. They regarded occasional slight differences in growth, shape, and staining as too slight and inconstant to separate the virulent form from the non-virulent. They regard a division founded upon the reaction to inoculation of the guinea-pig as an arbitrary one. It is well known that there exist bacilli which exhibit all grades of virulence in guinea-pigs, some causing certain death, some marked local changes, some temporary and slight œdema, and some causing no appreciable reaction whatever. They believe that in order to prove the two forms to be varieties of the same bacillus it is necessary to first derive the non-virulent form from the virulent, and secondly to derive the virulent form from the non-virulent. The first they have accomplished, but in the second they have failed.

When grown for a long time on agar a temporary loss of virulence occurs. When the bacillus is grown in broth through which a current of air is constantly passing, it is found that after two weeks the bacilli begin to lose their virulence, and at the end of four weeks they become harmless. A few days later the bacilli in the culture will die. Just prior to this time when all living bacilli produce non-virulent cultures, it has been found that some would produce virulent and others non-virulent cultures. When kept at 45° C. for three days the bacilli were found to possess many of the characteristics of the pseudo-bacilli. They were unable, however, to give virulence to those bacilli which produced in guinea-pigs no effect whatever. This was true both in those in which the loss of virulence had been acquired artificially, as in those in which it had occurred naturally.

Escherisch found in one city, out of seventy throats examined, non-virulent bacilli in two, and in another city, out of two hundred and fifty, they were present in eleven. In none of these was diphtheria present at the time of making the cultures. The animal inoculations were made from a forty eight hours' growth in glucose alkaline broth, and the quantity injected was equal to half per cent. of the weight of the guinea pig. With these precautions he never found any bacilli which had the characteristics of the diphtheria bacilli which did not prove virulent in guinea-pigs. The pseudo-bacilli were as described by Hofmann in some of his cases, viz., shorter, plumper bacilli, and of fairly uniform size. The growth on agar was more luxuriant, and in his cases whiter than the Loeffler bacilli. This investigator has also called attention to the fact that the pseudo-diphtheria bacilli show a tendency to lie in parallel rows on a cover-glass, while the Loeffler bacilli are collected together in a most confused manner. A further and most important difference was that the pseudo-diphtheria bacilli grown in litmus bouillon turned it blue after forty eight hours, while the true diphtheria bacilli produced acid, and turned the litmus red. There were no exceptions to this rule, so that where it was impossible to make animal inoculations he considered this would prove to be in all probability a certain guide in doubtful cases. With the true bacilli there was no relation observed between the amount of acid formed and the degree of virulence. He, too, found that in the milder cases, or during convalescence, the bacilli were apt to be less virulent, but to this rule there were many exceptions. This investigator concludes that since we have found constant cultural differences to exist between the true and pseudo-diphtheria bacillus, we can give the pseudo diphtheria bacillus no diagnostic value, and further, we do not find it a frequent inhabitant of the throat.

The speaker, continuing, said that if time permitted a more extended review of the results obtained by others, we would still more clearly be brought to believe that there are several varieties of bacilli grouped under this name of pseudo-diphtheria bacilli, for how otherwise could some observers affirm that the bacilli cause alkaline bouillon to become acid, while others equally good assert that it becomes alkaline; or that some should find them to be identical in all morphological and cultural characteristics with the Loeffler bacilli, while others find distinct and constant differences? Dr. Park said that in the large number of experiments carried out in the laboratory by Mr. Alfred L. Beebe and himself, they had met with numerous examples of all the forms described. Cultures from 330 non-diphtheritic throats gave, in 22, virulent Loeffler's bacilli; in 21, non-virulent characteristic bacilli; and in 28, Hofman's pseudo-bacilli.

Dr. Park then offered the following classification, and presented to the Society cultures in bouillon and on agar, and cover-glass smears representing each of these divisions:

1. Loeffler's Diphtheria Bacilli.—Found in cases of true diphtheria, and in persons brought in contact with them. They all produce the toxines described by Loeffler, Roux, Fränkel, and others. They are subdivided into, *a*, bacilli characteristic in growth, shape, and staining; and *b*, bacilli not characteristic, but still having the recognized slight variations only. All these produce acid in their growths in broth.

2. Probably Loeffler's Diphtheria Bacilli.—They agree with the above classes in every way except that they have no virulence when injected in animals, and do not produce the toxines. They are found in healthy throats.

3. Probably not Loeffler's Diphtheria Bacilli.—The growth on agar and serum is far more luxuriant than is ever seen with true bacilli. They first make the litmus cloudy, and then give the acid reaction. They are subdivided into, *a*. Shorter, plumper bacilli which usually stain evenly. They grow rather more quickly on agar, frequently give rise for the first twenty four hours to a cloudy broth, and give an alkaline reaction with litmus bouillon. (Probably a subdivision could be made here into those causing a luxuriant growth on agar, and those which do not do so, and which are plumper.) *b*. Bacilli shorter and plumper than is usual in Loeffler's bacilli, but taking a fairly characteristic stain. This third class is found in healthy throats, and more rarely with diphtheria bacilli in cases of diphtheria.

Dr. H. D. Chapin asked in regard to examinations made several weeks after dipntheria.

Dr. Park replied that if one followed them up for six weeks, they would be found to become less and less virulent while retaining their morphological appearances. He had not examined them after six weeks, but at this

time they were apparently in about the same condition as in children in whom they had been found, and yet who had not developed any symptoms of diptheria. The diagnosis was made chiefly on the stain, and the varied size and shape of the bacilli. These characters ranked next in diagnostic value to animal inoculations.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

CHELSEA HOSPITAL—MEETING OF GOVERNORS—RESIGNATION OF STAFF—HEALTH CONGRESS IN LONDON—RECEPTION BY LORD MAYOR—SUCCESSFUL MEETING—WORKHOUSE BARRACK SCHOOLS—DEPUTATION TO GOVERNMENT—INQUIRY PROMISED—MASSAGE SCANDALS—THE BRITISH MEDICAL ASSOCIATION WEEK.

London, July 28, 1894.

The troubles of the Chelsea Hospital for Women are not yet over. On Tuesday last there was a special meeting of the Governors to consider the report of the Committee of Inquiry. Lord Cardigan took the chair, and announced that as far as practicable the recommendations would be carried out. He could not, however, see how the lay members of the Board could control the staff or even ascertain that their work was at all times properly carried on. They must depend for their knowledge on the medical members of the Board, and the staff were thus represented but did not form a majority of the Board, and his Lordship held that this was quite right, in which opinion most men of experience will probably concur.

It was announced that in order to give the Board and Governors a free hand in the reorganization of the hospital the staff had all resigned, but were willing to continue their services pending the appointment of their successors. Dr. Fenton, on behalf of the staff, accepted the recommendations of the committee and pointed out that Dr. Parkes had withdrawn the expression in his report as to the "justifiability" of certain operations. This expression, I remarked at the time, was certainly not a proper one from a medical officer of health, who could not pretend to any expert surgical knowledge. Dr. Fenton pointed out that although retracted by Dr. Parkes this is not so well known as it ought to be. In regard to the mortality, Dr. Fenton produced statistics showing that in the special departments of large general hospitals there had sometimes been even a higher death-rate. Thus, as an example, the rate in ovariotomy had varied in six hospitals between 4.3 and 22.2 per cent., and Chelsea did not reach this maximum in spite of its sanitary defects. This only shows that it is impossible to draw conclusions from a percentage calculated from a few cases. After the meeting the Board of Management held a sitting in order to proceed with the reconstitution of the hospital. I hear that they will proceed to elect a new staff. To me it seems they might well follow the example of the late staff and resign their position; for, after all, the Committee of Inquiry condemned the Board of Management, and if anyone should resign they should, and the Governors should proceed to a new election. But then, Governors are, as a rule, merely subscribers—only a few take a real interest in such things and leave the work to those who do. These give their services and have a claim for consideration in case of mistakes or neglect, and nothing worse is alleged. At the same time the medical staff equally give their services and are not responsible for management. But then the medical officers are the readiest scapegoats, and in every alleged abuse are sure to be blamed. Then they resign and others are only too anxious to jump into their shoes. This is the usual end of every hospital scandal.

The Health Congress has met this week in London. This meeting was arranged by the British Institute of Public Health at their Congress last year, which was held in the University of Edinburgh, when on the proposition of the Lord Mayor of London it was decided to meet this year in the metropolis. All the sanitary authorities in the kingdom were invited to send delegates, and nearly two thousand were appointed. On Wednesday they were received at King's College, by Dr. Littlejohn, President, and Sir C. Cameron, Vice-President. On Thursday there was a great meeting at the Mansion House, the Lord Mayor in the chair, supported by the sheriffs and other city officials in their robes of office.

Professor William R. Smith, the new President, having been installed read his address, which appropriately dealt with the question of the Local Government of London. Curiously enough, on the eve of the Congress, the *British Medical Journal* came out with a spiteful little article evidently intended to spoil the meeting. People asked each other what it meant. It was said that a number of men had withdrawn, and hinted that the Mansion House assembly would be a failure. It would have done the editor good to see how little his own personal withdrawal, so ostentatiously announced, affected the Congress. All sorts of comments are made, but no one seems to know or care much in what way the managers have trodden on the editorial corns, but it is suggested that there has been a lack of adulation toward the D.C.L. The *Journal* has at the same time done good by agitating about the barrack pauper schools, respecting which it got up a deputation to the President of the Local Governing Board, who promised some inquiry either by a royal commission or a select committee of the House of Commons. It is not impossible that such inquiry may be more extensive than asked for. If that be the case so much the better. We need full inquiry into our Poor Law system rather than investigations restricted to one or two cases at a time. The deputation which was received on Tuesday was a very influential one, representing all parties, and including women as well as men, a natural thing when the interests of children are concerned. Sir John Gorst introduced the deputation in a moderate speech which the minister listened to attentively and commended, but Mr. E. Hart was reminded that his controversial speech went beyond his brief. He certainly deserved the rebuke as the sensational statements he made were evidently intended for an outside audience. Mr. Shaw-Lefevre looked at the question as a grave one, and as he promised to bring it before his colleagues in the ministry with the view of appointing an inquiry, the object of the deputation was obtained.

Vice seems ever ready to raise its head in large communities. It is now asserted that some establishments for massage are only brothels in disguise. The papers are full of the subject, and *Truth* admits that its editor has been for months informed of the existence of "facts such as no decent person could contemplate without horror!" It is to be hoped that this new scandal—the most horrible of the many that have been exploited—may lead to such action as shall deliver us from this form of the social evil and some others with it.

London, August 4, 1894.

The centre of gravity of the profession, so to say, has been shifted to Bristol for most of the week. Some went off on Monday, especially officials, but most were content to take a morning train on Tuesday; while others waited till afternoon and so missed the first general meeting and the sermon, but were in good time for the sections, which only began work on Wednesday morning.

As your several reporters will furnish you with full accounts of both the general meetings and the sectional proceedings, I need only gather up in this letter some of the fragments of the more popular side of the week's doings.

The attractions to the general meetings are the addresses. At the conclusion of these, or, at any rate, after the vote of thanks, there is usually a stampede, only a

few enthusiastic members staying to transact formal business, or join in discussions of which notices have been given.

These discussions, however, are the only occasions on which discontent can be expressed with the council or officials. It is not to be wondered at that among so many members differences of opinion and dissatisfaction should be found, and it is well that expression should be given to such sentiments. I hear, however, that the officials would like to suppress them. The policy of sitting on the safety-valve is not a very safe one, and it is possible the officials may be convinced of this in an unpleasant manner if they do not take warning. The editor came in for the mingled manifestations of approval and disapproval to which he is accustomed, but he is too astute a person to push any further the considerable irresponsibility which he has managed to attain.

The exhibitors of the Museum gave a musical conversazione on Tuesday night, which was numerously attended by the residents as well as the profession; and then the evening's proceedings, a new feature, proved most successful. The band of the Royal Marine Artillery was especially engaged, and played through a lengthy programme of music which was thoroughly enjoyed. The general meeting not being over till late prevented an early attendance, but by 9.30 the guests arrived in large numbers. There was a little speaking and the buffet arrangements were on a most liberal scale, and great satisfaction was expressed.

As to the Annual Museum, the present display is perhaps the most attractive and comprehensive that has been seen. The fine hall was most effectively laid out, the stands uniformly placed with great taste, and novelties shown on all sides, many coming under the head of surgical instruments and appliances. One of the chief features of the show was located in a small room, and had been prepared by Messrs. Oppenheimer, Sons & Co., Limited, London, and was in charge of Dr. Sambon, who has collected one of the largest assortments of antiquities allied to medicine ever seen in England. He proceeded with his researches for many years on behalf of the Italian Government, and says he has found abundant proof that the ancients had a more accurate knowledge of human anatomy than is generally believed. This he asserts by showing many well-executed specimens of different parts of the human frame and its organs, in terra-cotta, which had been given as votive offerings to the deities, who were supposed to preside over the wells believed to possess curative powers. He has fine models of ears, eyes, fingers, and scalps, all of which he says were thrown into these wells by persons who sought relief from complaints affecting those parts of the body. These all date from the Roman period, and display great skill, as they were the work of ordinary potters. This is supplemented by some three hundred surgical instruments from the pre-Christian days down to the fifteenth century, so it will be gathered the show is intensely interesting. At another stand were shown an interesting collection of optical scientific instruments; then there were stands to show the many new departures in food and physic. Messrs. Ferris & Co. made their stand the most attractive in the hall. Drugs naturally form a large portion of the show, and they are supplemented by many special preparations. The collection of surgical instruments is most comprehensive. The ever-ready plaster caddy is also shown as being Messrs. Ferris & Co.'s specialty, for keeping all kinds of surgical dressings in perfect condi tion without waste, and always ready to hand.

On Wednesday evening, August 1st, a series of enjoyable entertainments took place at Clifton College. These were arranged by the President and Executive Committee, and will be long remembered as forming one of the leading social features of the Bristol Congress. It was numerously attended, and the performances of the Orpheus Glee Singers were much appreciated. These singers have a reputation which is not confined to Bristol; no one could have gone away dissatisfied, for the members of Bristol's great choir acquitted themselves admirably. At the end of the concert there was an organ recital, and late as the hour was before it began, very few of the guests left before it terminated. Supper was served in a large tent, and after partaking of it we went and paid a visit to the Zoölogical Gardens, which were charmingly illuminated during the entire evening. This most enjoyable conversazione was brought to a close by a display of fireworks closing with a set piece, "The Good Samaritan," which was a well carried-out pyrotechnic performance. Then God Save the Queen was played and we each retraced our ways to our various hotels.

At 11 o'clock on the same day there was a grand organ recital at the Colston Hall by the organist of the Bristol Cathedral; invitations were freely distributed and there was a large gathering. The programme was selected with a view to displaying the great compass of the organ, and in this was very successful. Moreover, the items were full of tune and finish and much appreciated.

I must not forget the opening ceremony of the Clifton Pump room and Spa, which was publicly inaugurated on August 1st by the Mayoress of Bristol, and has been undertaken and completed by Geo. Newnes, M.P. The magnitude of the work gave rise to difficulties, and would have sorely tried the patience of less resolute men than Mr. Newnes, as will be appreciated when it is explained that the whole site has been cut out bodily from a sloping limestone rocky garden, which was acquired as being the finest position in Clifton for the purposes contemplated. It well deserves its name, and stands out in bold relief upon Sion Hill, reflecting the greatest credit on the architect and engineers. On this occasion several speeches were made and an illuminated address was presented to Mr. Newnes. In the evening, at the invitation of Mr. Newnes, many persons enjoyed the dual pleasure of listening to an excellent concert at the Grand Spa and inspecting the splendidly appointed Pump room. Lovers of music were also catered for on several other occasions during the Congress.

On Thursday some five hundred members were entertained at a garden party at Ashton Court, but unfortunately the weather was very unfavorable; happily there was a winter garden and museum in which they could take refuge. Another garden party was also spoiled, but here again in-door provision was made for such an event, an organ recital and other entertainments being provided. During the meeting the National Temperance League gave a breakfast to a number of the members. The League has done this for several years, and their breakfast has become a feature of the annual gathering. On this occasion the breakfast was presided over for the first time by the President of the Association, Dr. Long Fox, who is himself an abstainer, and who in welcoming the guests said he thought their position as medical men, with reference to this question of temperance, was that of medical missionaries. (Hear, hear.) There were many ways of helping and encouraging the movement, and it was impossible to say that many of these ideas were not very useful indeed, because, as the mind of man was various, so the methods of man were various also. He was not there to cavil at any of these methods, as some might say that law was of little practical use unless the common-sense of the nation had been educated up to its reception as a national want; but the great principle of the National Temperance League, the good influence of one person upon another in this temperance cause, would meet all possible objections. (Hear, hear.) Great as was the influence exercised by temperate medical men, with the full knowledge they had of how harmful alcohol was to vitality, and how injurious it was to many organs of the body, the chance of turning a neighbor from the error of his ways was enhanced a thousandfold if the speaker were a total abstainer himself. (Applause.) They could do something in the way of removing the stones from the King's highway. Already one sixth of the population had shaken itself from the

hideous evil that tended to the destruction of the nation, and in the noble fight against drink, the cause of poverty, disease, and crime, the key note of that and all kindred societies, they might justly boast would include freedom from all excess. (Loud applause.) The other night Dr. Annie Cornall wished the cause every success, and said the movement was especially important in relation to women, because they had such influence in the home.

Speeches were also delivered by Professor Cameron, of Glasgow, Dr. Ridge, Dr. Mackenzie, of Belfast, Dr. Hughes, of Wales, and Dr. Norman Kerr. Mr. Robert Rae, the Secretary of the League, returned thanks, and said the work of the League among the members of the medical profession was the most successful they had ever undertaken.

I hear that the dinner was well attended, but I did not go, having partaken of as many of these entertainments as I care to. For I have found each one very much a replica of the rest. So also I was unable to take the trip around the docks, which I hear about a hundred members enjoyed.

SHORTHAND IN MEDICINE.

To the Editor of the Medical Record.

Sir: In order to promote the use of shorthand in medicine, it is desirable that a list should be compiled of all who use it. We would, therefore, ask each practitioner and student who is acquainted with phonetic shorthand, to send his name and address to Dr. Neil, Warneford Asylum, Oxford, England.

The preparation of a list of medical phonographers is intended as a preliminary step to such further measures for mutual encouragement and help as may appear advisable.

W. R. Gowers, M D , F.R.C.P.,
Edward B. Gray, M.D.,
James Neil, M.D.

NON VOLUIT NOCERE.

To the Editor of the Medical Record.

Sir: In my lecture "Non Nocere," delivered before the Eleventh International Congress, which you printed in your issue of May 19th, I referred to a case of idiocy with premature ossification of the cranial bones kindly reported to me by Dr. Vander Veer, and used the following words: "Arthur McKee F——, born, 1891. Previous to his birth, a miscarriage and a still-birth. Mother had albuminuria every time [syphilis?]"

About a week ago I received from the father of the unfortunate baby a very indignant letter, dated June 9, 1894, in which he says: "I demand an explanation and insist upon a correction which shall appear in the next issue of the Medical Record."

Now, Mr. Editor, if after such a long time your space and your kindness permit you to publish all of this, I courteously offer the following "explanation" of my syphilis with interrogation mark in brackets, viz.: Successive miscarriages, to a certain extent also persistent albuminuria and excessive bone proliferation resulting from an irritative nutritive process, suggest the presence of syphilis in a late form. They do not prove it, unless there be corroboration by the history or the physical examination of the parents (mostly the father) or the wetnurse. The interrogation mark means: No certainty at all; at all events, justifiable doubt.

The "correction" is that "there was no such intimation whatever in Dr. Vander Veer's report;" that the father strenuously denies syphilis, and that, therefore, the cause of the poor baby's abnormal, both physical and mental, condition is not explained.

Very sincerely yours,
A. Jacobi, M.D.

New York, August 5, 1894.

PALATABLE AND DIGESTIBLE MILK.

To the Editor of the Medical Record.

Sir: A brief but suggestive editorial in your issue of July 28th, on the digestion of milk, prompts me to add one more to the devices by which the use of this most essential article of invalid diet may be made more agreeable to those who cannot, or think they cannot, take it "straight."

I have never seen it mentioned in any text-book, and it did not come to me from a professional source, but from a lady who had been for a long time the patient of the late Dr. Pease, of Syracuse. Whether it originated with him I cannot say, but perhaps some of your readers in Central New York, by whom he is doubtless as pleasantly remembered as by myself, can tell me. It is as follows:

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopœia. The milk should be stirred until it cools.

In this way a very fine flocculent coagulum is produced, floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many.

It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatized milk.

I have found it occasionally of great value when other preparations have been unacceptable either to the palate or the stomach. Robert T. Edes, M.D.

Boston, Mass.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 11, 1894.

	Cases.	Deaths.
Tuberculosis	70	88
Typhoid fever	37	6
Scarlet fever	23	6
Cerebro-spinal meningitis	0	6
Measles	16	0
Diphtheria	111	34
Small-pox	1	1

The True Physician longs for the time when in every fellow-practitioner he shall find a brother, a counsellor, a scholar, a gentleman.—W. J. Bell.

Lactate of Cocaine in Tubercular Cystitis.—Dr. Wittsack has found benefit from the instillation into the bladder, once or twice a week, of fifteen drops of a solution containing twelve grains of lactate of cocaine and one drachm of lactic acid in one drachm of water. Lactate of cocaine is a white substance the consistency of honey, readily soluble in water. It has not yet been obtained in a dry state.

Remarkable Fecundity.—An instance is related in the *Journal de Clinique et de Thérapeutique Infantiles* for May 10, 1894, of a woman, forty-nine years old, who had given birth to twenty five children. She had been married three times and had never had twins. Of the twenty-five children nineteen were boys, who had all died in childhood; the six girls had all lived, the youngest being five and the eldest twenty-eight years old. The woman had received a medal at the Sorbonne in recognition of her patriotic efforts to increase the population of France.

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Original Articles.

THE CURE OF CARCINOMA OF THE BREAST BY RADICAL OPERATION—OBSERVATIONS IN ONE HUNDRED AND EIGHTEEN CASES.[1]

BY WILLIAM T. BULL, M.D.,

PROFESSOR OF SURGERY, COLUMBIA COLLEGE, SURGEON TO THE NEW YORK HOSPITAL.

THE following series of cases, occurring between the years 1880–94, are offered as testimony to the value of the modern radical operation in cancer of the female breast. In every instance but one the diagnosis has been confirmed by microscopical examination, for which Dr. Frank Ferguson, pathologist to the New York Hospital, has been responsible in the majority. To the tracing of the cases through this number of years, and keeping the records up to date, January 1, 1894, Dr. Charles A. Powers, surgeon to St. Luke's and the New York Cancer Hospitals, has given much time and enthusiasm. He has been associated with me in the care of many of these patients during the past five years. To his efforts is due the circumstance that but 3 of the 118 cases have been lost sight of—a smaller percentage than is noted in any other record. Weir, for instance, traced but 60 of his 125 patients, Dennis was able to keep sight of but 33 of 71, and Curtis (MEDICAL RECORD, No. 24, 1894), in collecting the statistics of eight foreign clinics, gives final results in only 813 of a total of 1,213 cases.

In the matter of etiology, trauma, previous inflammation, heredity, and age, are found to play about the same rôle as is mentioned by other observers. There is no noteworthy difference from other statistics; and in these particulars, as well as in such details as the part of the breast affected, the relative frequency of disease of the right or left breast, this series gives no information of practical value. In passing I may, however, note the fact that of 13 cases in which cancer existed in the previous generation 11 were found among the recurrent and 2 among the cured cases; and furthermore, that I have taken no notice of the item of duration of the disease before operation, because the data in most instances are so untrustworthy. I have excluded all cases of secondary operations (about twenty in number) performed on patients with whom I had no previous experience, and have no records of patients in whom no operation was advised.

The practical value, then, of this record is in its showing as regards the question of cure, to which only a portion of the cases contribute, because not all operations have been complete or radical in character. As incomplete operations, which are ten in number, performed in the years 1880 to 1884, I include those in which the breast only was removed primarily; as complete, those in which the breast was excised together with a liberal amount of skin over it, the fascia of the pectoral muscle, and the glands of the axilla embedded in their fat. This thorough and admirably planned operation was first suggested by Moore, then advocated by Banks, in England, popularized by Volkmann in Germany, and warmly supported by Gross in this country; and it is now, I believe, generally adopted. It has been performed in 108 cases without reference to the condition of the glands as determined by examination prior to the operation.

The 10 incomplete operations were all followed by recovery; the 108 complete operations include 4 fatal results, the cause of death being in 2 cases erysipelas; in 1, chronic nephritis and pneumonia; in 1, acute sepsis and pneumonia. This is a mortality percentage of 3.6 per cent. Curtis, above quoted, finds a mortality-rate of "very nearly six per cent." in 1,213 cases, while Weir and Dennis have reported series of 125 and 33 cases, respectively, without death. For so small a mortality it seems hardly necessary to offer explanations, but it is worthy of note that all the patients were of the hospital class, that the two dying of erysipelas undoubtedly were infected in the hospital, and that the case of acute sepsis owed its existence to a streptococcus invasion from an undiscovered source. Curtis's statistics go back as far as 1870. The mortality of the later reporters is much less than that of the earlier, and in view of several series without any mortality, I think it may be averred that the complete operation is attended with but little more risk than the incomplete, and that in persons otherwise healthy and in operations unattended with accidents, it ought not to be greater than three or four per cent. This is a very slight risk for the patient affected with cancer to take, especially in view of the prospect of cure.

In order to determine the proportion of cures, we can utilize of the 108 only those cases which were operated on prior to 1891. Since that date there have been 30 operations. Deducting these and the three which have been lost sight of, I have 75 cases. Of these 75 cases 3 died from the operation; 50 died from recurrence or metastasis; 2 are still living with recurrence; 4 died of other diseases after having passed the "three-year limit" without manifestation of cancerous disease; 16 are alive and in good health on January 1, 1894.

This gives 20 cured cases out of a total of 75, or 26 6 per cent. This is a higher proportion of cures than has been previously reported. Curtis gives 20.7 as the percentage of cures in the 1,213 cases he collected. Weir "nearly twenty," and Dennis twenty-five per cent. The value of my percentage is increased, I think, by the fact already mentioned, that but 3 cases of 108 have been lost sight of.

Regarding these 20 cured cases more in detail, let me say of the 4 who died of other diseases, after passing the "three-year limit," that

One died at the end of 5 years, of pneumonia.
One died at the end of 3½ years, of chronic bronchitis and emphysema.
One died at the end of 3½ years, of acute rheumatism.
One died at the end of 3 years, of chronic nephritis.

The 16 cases still alive and free from recurrence have lived on an average six years and a few days since the operation. To be more explicit:

Two are living and well 3 years and 9 months after operation.
Four are living between 4 and 5 years after operation.
Three are living between 5 and 6 years after operation.
One is living between 6 and 7 years after operation.
Three are living between 7 and 8 years after operation.
One is living between 8 and 9 years after operation.
One is living between 9 and 10 years after operation.
One is living 10 years after operation.

These cured cases are all the more significant because of the extent of time they have remained cured, the average, six years, being twice as long as the "three year limit." Only 2 have undergone secondary operations. Of the

[1] Read at a meeting of the Surgical Section of the Massachusetts Medical Society, June 12, 1894.

4 who died free, 1 had a recurrent nodule removed at the end of four months, and died of rheumatism over three years later. Of the 16 still living, one had three nodules removed at periods of six months, seven months, and eighteen months after the primary operation, and is living five and one half years since the last operation.

In computing the percentage of cases I have included in the total of seventy-five, the three patients dying from the operation. This class has been deducted by some reporters. I have excluded from the "cured" list one case which died of cancer of the œsophagus nine years after the operation on the breast and axilla, having been free meanwhile from recurrence—a case which might be fairly regarded as an instance of fresh infection, or the development of a growth entirely independent of the original disease. Poulsen[1] has reported an instance of cancer of the pylorus developing five years after an operation on the breast, which is capable of a similar explanation. I have accepted the "three-year limit" as evidence of cure in order to make my statistics to conform to those of others. It seems to be true, in the majority of cases, that recurrence takes place in loco, and metastatic deposits occur within this time, though instances of a later development of both features are not rare. Curtis, from various sources, records thirty-four recurrences after three years and up to the seventh year. Weir has seen one at sixteen, and one at twenty years. I am not able to give the precise data of recurrence in many cases, but can say that the average duration of life in cases dying of recurrence or metastasis was less than three years, and that I have observed no instances of reappearance of the disease after three years. A four-year limit would be undoubtedly more accurate. Judged by this standard, my list of cures would be reduced by only 5 cases, making 15 cures in 75 cases, or a percentage of twenty, the same that Curtis's 1,213 cases give with the year limit.

The patients operated on since 1891, not available for the question of cure, are 30 in number, of whom 10, or thirty-three and one third per cent., are without recurrence and with prospect of cure, though an average of but fifteen months has elapsed since their operations. Two died within eighteen months from the time of operation, free from cancerous disease; 1 died from the operation, which is already counted in the list of deaths; 11 have died of cancer already, and 6 are living with recurrent disease.

The record of the incomplete operations emphasizes the advantage of the complete or radical method of treatment. Of 10 patients in whom only the breast was removed, all died of cancer at the end of an average period of thirty-four and one-half months, 3 having undergone several secondary operations. It is my conviction that, except as a palliative method, this form of operation should no longer be countenanced. It is unquestionably attended with less risk, as numerous statistics have shown, but our knowledge of the course of the cancerous diseases, and the absence of statistical facts to support it, demonstrate that it is an utterly inadequate method.

In every case of cancer, whether the glands of the axilla be felt to be enlarged or not, the complete operation should be done. It removes not only the diseased area, but the parts more likely to be affected by recurrence, the skin and pectoral fascia, which have been shown by Heidenhain to be often the seat of deposits which may escape the naked eye. It clears out the axilla, the next resting-place of the neoplasm, whose glands may be enlarged from disease without their presence being discovered by external examination. Only in abnormally thin subjects can one be reasonably sure of the condition of the glands, as many surgeons have testified. It should do more than this, and that is, remove the parts between the axilla and the breast, the region through which the lymphatics pass. In my operations, as the accompanying cuts will show, I have been in the habit of removing the parts in one solid mass from the inner periphery of the breast to the apex of the axilla; and this detail, which is not generally insisted on, I regard as of great importance.

[1] Arch. für klin. Chir., 43, p. 592.

Without quoting other statistics, it may be safely stated that the complete operation has been, since its introduction, attended with a diminishing mortality and an increasing percentage of cures. It has unquestionably been done in many cases in which it could promise little on account of the extent of the disease. One cannot avoid this conviction in reading the histories of individual patients, and I know that, in many hospital and some private patients, I have performed operations under circumstances which a maturer judgment and larger experience would now regard as contra-indications to the operation. If we could expunge from all our lists the number of these advanced cases, the showing would be a very much more encouraging one. My notes are not

Fig. 1.—Cancer of the Nipple, Breast, and Axillary Glands, following Ulceration of the Nipple for Eleven Months.

Fig. 2.—Cancer of Breast and Axilla, to Show Amount of Tissue Removed.

sufficiently full in the matter of extent of the disease to enable one to make any such distinction. Such points as adhesion to the wall of the chest, involvement of the pectoral muscle, fusion of the cancerous glands, and adhesion to the axillary vessels are rarely mentioned, though all or some of these conditions have been met with in a considerable number of cases. But in regard to involvement of the axillary glands I can give some data.

Of the 20 cured cases the breast alone was affected in 12, while in 8 both glands and breast were involved. Of 55 cases dying (3) of the operation or recurrence (50), or living with recurrence (2), the glands were involved as well as the breast in 38, while in 10 the glands were free from disease. In 7 the condition is not stated. In other words, of the cured cases forty per cent. had both breast and axilla affected. It should be stated that the evidence of involvement of the glands in most cases was determined by microscopic examination, and that in

many the deposits in this region were detected only after the axillary fat was cut into.

The complete operation, then, is capable of effecting a cure even when the glands are involved, and that in a considerable proportion of cases; and if we make a sharp distinction between the cases according to the condition of the glands, we shall get the following more encouraging picture of the 75 cases:

This condition was not noted in	17
Breast alone affected in	22
Breast and glands affected in	46
Total	75

Of 22 cases in which the breast alone was diseased, 12, or about fifty-four per cent., were cured, 10, or forty-five per cent., died of recurrence. Of 46 cases in which both breast and glands were involved, 8, or seventeen per cent., were cured, and 38, or eighty-two per cent., died of operation, or a recurrence, or are living with recurrence. This showing would support the statement that in at least one-half the cases of cancer limited to the breast alone the complete method may be expected to effect a cure. The deaths, it is to be noted, are all among the cases where both glands and breast are involved. Delaying the operative treatment, then, not only increases the death-rate but diminishes the prospect of cure. Patients ought to be subjected to the complete operation in the earliest stages of the disease. There is no longer any excuse for delay on the part of physicians, on the ground that more time is needed to make a diagnosis, and the laity, if made aware of the possibilities of cure, will promptly overcome the dread of operative treatment, which is another reason for delay. Irregular practitioners furnish the public with the strongest representations, or misrepresentations, of the success of other methods which we know to be of less value than the operative ones. Why should not the regular profession, through its public representatives—the Boards of Health—be equally active in informing the people of the danger of delay, and the promise of cure by early and radical treatment?

In a condition, the successful treatment of which depends absolutely on its promptness, exactness in diagnosis should play a secondary rôle. A lump in the breast is never a "nothing," as it seems occasionally to be termed by physicians who see it first. It is either an inflammatory deposit, or a solid or cystic tumor. Between the two latter conditions it is often impossible to distinguish in large and even small breasts. But the hypodermic syringe and needle, which should be used in all doubtful cases, clears up this point at once. With its use I have demonstrated the harmlessness of cases which have been viewed with suspicion or pronounced malignant by others, and in passing may note that I have encountered thirty cases of simple cysts of the mamma in the past ten years, probably about ten per cent. of all the cases seen. If a tumor be thus proven to be solid, exploratory incision should be made the diagnostic test when its features are doubtful. Naked-eye inspection will usually suffice, though the freezing microtome and the nitric-acid test of Stiles, or the "punch" devised by Mixter are unobjectionable. They can be employed when the incision is not allowed. There is no reasonable objection to the incision. A benign growth demands operation almost as urgently as a malignant one, for we have ample testimony of the degeneration of these tumors into malignant ones at or after the menopause. Inflammatory deposits can suffer no harm from incision or renewal. They are liable to be the precursors of cancerous disease, and can be looked upon as safe, and entitled to be unmolested, only when they are disappearing spontaneously after a recent acute mastitis. I have two cases bearing on the degeneration of benign tumors which are worth recording. The first, a woman, aged forty-five, noticed a rapid growth of a tumor which had been quiescent in one breast for sixteen years. At the end of one year the whole breast was transformed into a typical carcinoma, which was removed without the glands. Two secondary operations were done, followed by local recurrence, and she died, at the end of five years from the beginning of the disease, with cancer of the liver. The second, aged seventy-five, carried for eighteen years a small painless tumor, which in one year involved the greater part of the breast and the axillary glands. One complete and one secondary operation were followed by death from cancer of the lungs and pleura after twenty months.

A condition of chronic eczema of the nipple (or Paget's disease) giving rise to cancer, I have met with in four cases, which are noticeable because the duration of the ulceration did not exceed one year, being four months in one, eleven months in a second, and about a year in the third or fourth. In two the glands as well as the breast tumor underlying the ulcer were cancerous. The ages were forty-eight, sixty, fifty, and forty years. One patient, operated on a year ago, is still alive and free. Two died of recurrence within two and a half years. One lived eighteen months free from trouble, to die of pneumonia. One patient declined any investigation of the axilla, and was obliged to undergo a secondary operation eight months later, which revealed glands which must have been diseased at the time of the primary and incomplete operation. The importance of these cases should not be overlooked. Although it has been noted that these eczematous conditions often go seven and even ten years before the development of cancer, it is proper to regard them with suspicion, and desirable to treat them promptly by complete operation so soon as milder measures fail.

In one of the above cases, where an ulcer had existed—refusing to remain healed under the application of ointments for a period of eleven months—I had a wedge of the base of the ulcer removed for examination by the pathologist, who pronounced it only "chronic inflammation." In view of the duration of the ulceration and its well-known tendencies, I urged exploratory incision. A part of the ulcer deeper than the mass removed looked surely cancerous. The whole breast was removed, and the axilla invaded. Subsequent investigation showed the breast to be cancerous in the neighborhood of the ulcer, and the glands not to be affected. These might be considered cases of primary epithelioma of the nipple, but the fact remains the same, that a persistent ulceration of the nipple often leads to cancer, and must not be neglected.

It has been generally claimed that the complete and even the incomplete operation, when it fails to cure, prolongs life and makes its ending less distressing. I have not the data at hand to give figures bearing on these points, because the duration of the disease, as proven by patients, is so indefinite; but I can safely say that, judging by the results so far as the duration of life is concerned, in those which have undergone secondary operations, and those which have not, the operated cases have the advantage. For instance, of ten incomplete operations all died of cancer at the end of an average period of $34\frac{1}{2}$ months; seven of these, without secondary operation, lived on an average of $23\frac{6}{7}$ months; three, who had secondary operation, lived an average of $58\frac{1}{3}$ months after the first operation. Of sixty patients with complete operation I note forty-seven who died without any but the first operative interference, $20\frac{34}{100}$ months; while thirteen who had one or several operations subsequent to the first, died 30 months afterward. But one single case is worthy of mention. A woman, aged fifty, underwent the complete operation for a tumor of breast alone of two years' duration. She died of cancer of liver, lungs, and pleura, at the end of eight years and eight months after the operation, ten years and over from the outset of the disease. In this interval five operations were performed, including one on the opposite breast.

Operations, in my opinion, do prolong life, and I am quite sure they have a further advantage in regulating the course of the disease, so as to make it more bearable.

In a certain number of cases there is no external outbreak, and the patient dies of internal deposits without knowing the nature of her malady. The annoyance of a foul and bleeding ulcer is avoided, with the pain that comes from involvement of the walls of the chest. Furthermore, the clean removal of the axilla diminishes the chance of interference with the venous circulation and the occasion of that distressing feature—œdema of the entire arm.

These facts encourage me to advise secondary operations when the growths are small and freely movable. Several such operations may be required without materially diminishing the prospect of final cure; but in general I have little faith in the value of secondary operations, except as palliative measures. I believe it is an excellent measure in dealing with the first occurrence to give an anæsthetic and inspect thoroughly the whole line of the cicatrix, rather than to trust to the removal of the growth with the use of cocaine. This "revision of the scar," as I have termed it, done at the moment of the first recurrence, has enabled me to find and remove nodules that were not felt on palpation. The cocaine operations, of which I have done a number, have seemed to me exceedingly unsatisfactory.

In the axilla the removal of recurrent nodules or glands is often a matter of difficulty, owing to the presence of cicatricial tissue and the likelihood of finding deeper masses adherent to the axillary vein. Excision of a portion of the vein is required in the latter event, a procedure which I have never known to give rise to unpleasant results, but which may in its performance offer an opportunity of wounding the vein several times unawares, with serious hemorrhage. In general, operations for recurrent masses which are adherent either in the axillary or breast part of the scar, I have found to be of no advantage whatsoever.

The operation itself needs no description in detail, but there are several points which are worthy of emphasis. The skin incision should in general conform to the oval type—a widely open oval—and extend from a point near the sternum to one overlying the axillary vessels. Its long axis may be at right angles to the direction of the pectoral fibres, with a second cut in the axillary region, if the tumor be most conspicuous at the upper and inner, or outer and lower, periphery. Its outline is of little consequence. Its distance from the neoplasm is of the greatest importance. When the growth is in the breast I have usually placed the incision at least one inch from the borders of the gland, where it is peripherally situated two inches from the edge on the side affected. The cut must be made without reference to subsequent approximation of the edges, though much tissue can be advantageously saved in the axillary part of the incision, and in the majority of my cases a primary union has been possible. After separating the mamma itself it is allowed to hang down, still in connection with the axillary part, till the parts between the breast and axilla and the contents of the latter have been separated. There is little danger of wounding the axillary vessels if the fascia over the vein is first clearly laid bare and the mass of vessels and nerves gently pushed away from the fatty contents, the vessels crossing the space being clamped before they are cut. The subscapular nerves must be avoided, but the intercosto-humeral branches must not be cut. After the axillary space has been freed of its contents, search must be made at the very apex, and in the region between the two pectoral muscles, where outlying glands are occasionally found. In closing the wound I have given up all sorts of relaxation sutures and come to rely on fine catgut. The edges are brought only loosely together without any strain, but carefully approximated to the deeper parts with compresses supported by adhesive straps. The axillary space must be obliterated by an additional wad of gauze. If open wounds are left, it is better, in my opinion, to practise skin-grafting after granulation has occurred. The operations have naturally, in the course of these years, run through the various modifications of antiseptic dressings. The most recent cases show the most satisfactory results, and these have been done on aseptic principles, with sterilized materials and without irrigation or drainage. Complete primary union without complication has been obtained in fully two-thirds of the cases, and, where it has failed, there has been no serious sequelæ nor prolonged suppuration. In two instances erysipelas was fatal. Operations done in private houses have produced uniformly good results as regards wound healing. There have been no serious after effects of these operations. Some patients are much annoyed by a hyperæsthesia of the skin on the inner side of the arm, which gives place to numbness which gradually disappears. This phenomenon has been such a frequent source of complaint when the dressings are removed that I usually lead patients to expect it, and promise that it will disappear.

The movements of the arm and shoulder joint have become ultimately perfect in all cases. I usually encourage motions from the elbow on the fifth day, and those of the shoulder after the tenth day, and on the average the slight stiffness yields to natural exercise within three or four weeks.

In closing, let me say that I have made no distinction in this series between the different varieties of carcinoma, because of the difficulty of assigning many cases to an individual class. But I should state that I have uniformly advised against operation in the variety known as "atrophying scirrhus," occurring in old people, and in the rapidly growing voluminous tumors occurring between thirty five and forty-five, and described as encephaloid or medullary carcinoma.

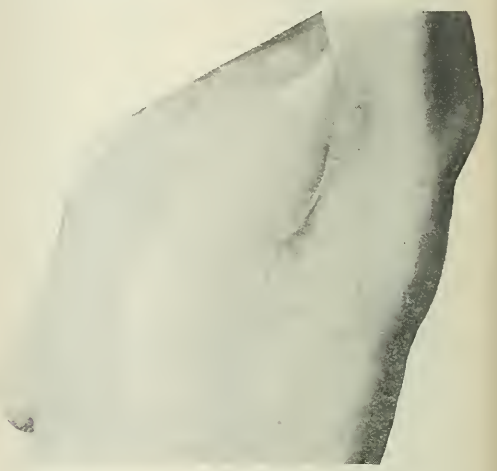

FIG. 3.—Cicatrix, with Free Mobility of Arm, Four Years after Operation.

I thank the Massachusetts Medical Society and yourself, Mr. Chairman, for the privilege of bringing before you these results of treatment of this most important surgical disease; and I hope that your experience may be in line with my own and will serve to strengthen our convictions, that the modern radical or complete operation has already cured from twenty to twenty-five per cent. of all cases of cancer of the breast; that it may be expected to cure at least one-half the cases if applied before the axilla is invaded; and that it is likely to have an even better showing if the patients can be brought to treatment earlier than they manage at present. This can be effected by less attention to accurate diagnosis, and by giving up the habit of waiting to see how the tumor will develop, and by relying on needle exploration and incision. The incomplete operation should be abandoned, except as a preventive measure, or for the relief of local symptoms. Benign neoplasm and inflammatory deposits

should be removed, and persistent ulceration of the nipple treated as cancer. Secondary operations are of value only when the nodules are small and free from adhesions, and the "revision of the scar" should be performed in the event of the first recurrence after complete operation. The risk of the complete operation is slight, and it is followed by no undesirable after effects.

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ON THE NEW RELATIONS OF PATHOLOGY AND PRACTICAL MEDICINE AS BEARING UPON THE PATHOLOGICAL DEPARTMENTS OF OUR HOSPITALS.

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In the progress of every science a period of fact accumulation must precede the more strikingly epoch making one of generalization. Until generalization commences but little practical application of the facts accumulated is possible. Pathology affords many examples of the truth of this great principle of all inductive science. Its clear perception stimulated Morgagni and his followers to collect the carefully corroborated facts which a century later suggested the generalizations of the cellular pathology of Virchow; and, similarly, the facts accumulated by Pasteur in the study of fermentation and putrefaction, made possible the even greater generalization of the causative relationship of micro organisms to disease. A glance at the influence of these generalizations upon the study of disease and upon the relation of the pathologist to the clinician is most suggestive.

The enunciation of the fundamental law of the cellular pathology, *omnis cellula e cellula*, drew attention to the cell as the ultimate living factor in the production of the lesions of disease. The cell and the tissues to which it gave rise thenceforth became the prime objects of study to the pathologist. This resulted in the accumulation of a vast fund of knowledge of the morbid anatomy of disease. The great usefulness of this study to practical medicine was evident in the greater accuracy of diagnosis, and, secondarily, in the juster appreciation of the limitations of medication. So long as it was the dominant force in pathology the careful autopsy and subsequent examination of the tissues met all the absolute requirements. They acted as a check upon diagnosis, showing the clinician his error when it existed, and so helping him in subsequent cases of the same nature to a more correct interpretation of the symptoms. From the very nature of the case the work of the pathologist was largely post mortem. He was often deplorably ignorant of the pathology of minor ailments not usually followed by death, he had but a secondary interest in symptomatology (in reality an important part of pathology in its broader sense), and he was rarely called upon to assist the clinician at the bedside The position occupied by pathology during this time was, then, essentially that of a pure science; it had but a limited practical application.

But, with the development of the idea of the etiological relationship of micro-organisms to disease a new epoch has opened. We have been taught that many diseases are the result of the entrance into the body and growth there of noxious living organisms; that the changes which the study of morbid anatomy showed to be characteristic of these diseases, are the result of the action of these organisms upon the tissues of the body; that this action is produced by poisonous substances elaborated by the micro organisms, some of these toxines expending their energies upon the tissues in the immediate neighborhood of the growing germs, while others are diffused throughout the body, giving rise to fever, prostration, etc., symptoms more or less common to all diseases of infectious origin.

By these discoveries new interest is awakened in the alluring field of preventive medicine, for it has been established that without the agency of the specific microorganism of an infectious disease, that disease can never originate. Prevent its entrance into the body, and the disease is prevented. Thus, the interest attaching to the determination of every detail of the life history of the microbes of disease becomes immense, many new problems at once suggesting themselves. What is the path of entrance of the specific organism into the body; in the air inspired, in the food, or through the skin? Through what channel does it leave the body of the patient? What is the manner of its dissemination, its resistance to drying, sunlight, heat, etc., its habitat during the interval of its transmission from one person to another? Without a thorough knowledge of all these points it may be impossible to institute an efficient plan of prevention. And, furthermore, we inquire whether, in certain diseases in which prevention of the entrance of the infectious material into the body may be impracticable, it may not be possible nevertheless to induce a condition of immunity to its action, in this way accomplishing the same ultimate result? Thus the influences inducing a predisposition to, and those inducing an immunity from, the action of the contagium of infectious diseases must receive most careful investigation.

It must be evident, then, that the determination of the causal relationship of micro organisms to disease has revolutionized the whole science of pathology, very greatly widening its scope and increasing its usefulness to the clinician tenfold. The student of pathology must in future acquaint himself with subjects which until recently were supposed to have little, if any, bearing upon disease. It is no longer sufficient for him to confine himself to the study of morbid anatomy, but he must now also search for the living causes of disease, he must study their peculiarities of structure and growth, their mode of action upon the body, the toxines which they elaborate, their paths of entrance to and egress from the body, and the various problems of their destruction and the prevention of their ravages. In his search for the cause of a disease he need not wait until death has brought his victim to the autopsy-table, for experiment has shown that often during life the germs of a disease are present in the blood and in the various excreta of the body, as are also the chemical poisons which they produce. Thus, early in the course of the disease the aid of the pathologist is sought in diagnosis through examination of the sputum, vomitus, blood, urine, fæces, and various inflammatory products. Upon the result of his examination the subsequent treatment of the case will often largely depend.

But, besides the changes in pathology wrought by the study of the causation of disease, the past ten years have added greatly to our understanding of pathological physiology, if the expression may be allowed, meaning thereby the perversions of function which are the result of disease.

Those evidences of disordered function accessible by the ordinary means of observation, and spoken of as the symptoms of disease, while really a part of pathology in its broader sense, have come very properly to belong to the domain of the clinician, and with them the pathologist has ordinarily but little to do. But a multitude of evidences of disordered function are inaccessible to ordinary observation, and for their detection the services of the pathologist are required. Foremost among these at the present time are the changes in the chemistry of the body which occur as a part of disease, and the immense importance of the study of these changes may be inferred from the fact that chemical change has been shown to be a necessary part of all vital process. Accordingly, with the aid of the facts accumulated by the study of physiological chemistry, we are beginning to build up a pathological chemistry which promises to be of great practical value. During life the study of the chemical changes indicative of disease is of necessity restricted to the examination of the various secretions and

excretions of the body; but as the result of the careful study which they have received we shall soon be able to infer with much accuracy, from changes in their chemical composition in disease, as to the nature of the processes upon which their abnormalities depend. Already, examinations of stomach contents, of urine, of fæces, of exudates and transudates, and of the blood have become an important part of the daily routine of the pathologist. He must be acquainted with the best tests for hydrochloric acid, for pepsin, and for the abnormal products of digestion in the stomach; he must be able to determine the quantity of albumin, sugar, urea, uric acid, sulphates, indican, etc., in the urine; he must know how to detect the results of imperfect intestinal digestion in the fæces; he must be familiar with the changes in the composition of the blood dependent upon diseases of the various organs of the body. But these are only a few of the problems suggested by the development of pathological chemistry. Their immense importance to clinical medicine cannot but be apparent.

Closely in touch with the new duties imposed upon the pathologist by the study of the chemistry of disease, are others which have been suggested by the results of the investigation of the various problems of immunity. The self-limited course of the infectious diseases, and the protection afforded by one attack of many of them against subsequent attacks of the same disease, have long been recognized. The recent study of immunity explains this by the theory that, hand in hand with the production of the toxines of these diseases, there are produced (by the cells of the body, presumably) certain antagonistic substances which neutralize the toxic principles and thus prevent their action upon the body. These antagonistic substances are called "antitoxines," and the extent of their production is supposed to measure the degree of immunity produced. It has been found that these antitoxines are present in the blood of animals rendered immune by artificial means, that the blood of an animal so immunized possesses the power, when introduced into the body of other animals, of conveying its immunity to them, and, more important than all, of ameliorating the symptoms produced by a previous inoculation with the infectious material. These facts have been shown to apply to man as well as to the lower animals, and thereby has been suggested a plan of treatment of infectious disease by means of the blood serum of immune animals, which appears most promising from the reports thus far published. It is to the pathologist that the clinician must look for the induction of immunity in animals and the preparation of the blood-serum necessary for this treatment.

Now, it must be evident that the advances in pathology which we have sketched demand on the part of the pathologist a special training for his work, and the devotion to it of an amount of time and labor quite beyond the possibilities of the clinician. He must now have a thorough acquaintance with bacteriology, animal chemtry, and toxicology in addition to his knowledge of pathological anatomy. He must have trained powers of observation and of experimental research, and he must have at his disposal laboratories equipped with every appliance necessary for the conduct of his investigations.

And this leads us to speak of the necessity of much further development than has yet occurred in the way of providing pathological laboratories in connection with our hospitals. We are justly proud of the flourishing laboratories of pathology which have grown up in connection with many of the medical colleges of this country, and of the careful investigations of the problems of disease which are being carried on in them. But by the development of such a wide field of practical applications pathology has, of necessity, become more or less divided into two distinct though closely associated departments, that of the pure science of pathology occupied with the theoretical solution of all the problems of disease, and that of the applied science of pathology occupied with the application of all the principles of the science to the practical uses of the clinician. Though fulfilling all the requirements of the first, the laboratories of our medical schools in only a secondary way meet the demands of the second. Connected with educational institutions, they are conducted primarily for educational purposes; the time of those connected with them has many demands upon it for routine work in connection with large classes of students; and unless at great expense of time, the pathologist is never brought into contact with the patient, because of his distance from the hospital. Thus, the direct usefulness of the pathologist to the clinician can be but slight.

It is evident, then, that the true ground for the development of pathology as applied to clinical medicine is the hospital and its thoroughly equipped laboratories, and we would insist again that without these, the clinician must forego to a very considerable extent the great assistance in his work afforded by the pathologist. It is surely no unreasonable demand on the part of the patient, that his physician should be in possession of every aid afforded by modern science in the treatment of his case.

What, then, is the equipment which a hospital should have in order to be abreast of the times in so far as pathology is concerned? Besides the thoroughly equipped autopsy-room, with its adjoining refrigerators for the storage of bodies, there should be laboratories devoted to histology, bacteriology, and chemistry. These should be well lighted and well ventilated, and should be sufficiently large to afford abundant working space, and to contain all the apparatus required by the most recent advances in these several branches of science, in so far as they bear upon pathology. The histological laboratory should be provided with a good outfit of microscopes, microtomes, and everything necessary for the minutest study of the structural changes of the tissues in disease. It should have the best light obtainable, and should afford ample shelf room for the storage of the pathological material which must be accumulated for study. The bacteriological laboratory should afford every facility for the cultivation and study of the micro-organisms of disease. It should be removed as far as possible from the possibility of contamination by dust or other disturbing influences, and for use in connection with it there should be a room fitted up for the accommodation and observation of animals used for the experimental determination of the pathogenic action of the bacteria. The chemical laboratory should contain a complete outfit of apparatus for the examination of the various secretions and excretions of the body, for the separation and study of the toxines of bacteria, and for the preparation of materials for preventive inoculation and for the treatment of disease by means of the blood-serum of immune animals.

All this involves a considerable outlay of space and money on the part of the hospital, but these are more than counterbalanced by the many advantages to its patients to be derived from such an equipment. The space and light may best be obtained in a separate building especially devoted to the pathological department; the annual expense incident to the conduct of such a department, after the first outlay for building and equipment, would be relatively small.

And, finally, the hospital should be able to command the services of a man as director of such a department, whose time and energies are entirely devoted to the scientific development of applied pathology. It is no longer possible for pathology and practical medicine to be carried on successfully together, and, since in giving his services to the hospital the pathologist must be debarred from other means of support, he should receive a salary sufficient for his needs and sufficient to put men of ability at the command of the hospital.[1] The proper conduction, then, of a pathological department such as we have endeavored to sketch, demands the payment of

[1] It would seem that a fair criterion of the amount necessary for this purpose might be found in the salaries paid by our universities to their professors of pure science.

good salaries to its director and his assistants, and the affording them every facility for scientific investigation.

The educational and scientific power of a hospital equipped as has been suggested is simply inestimable. Already the Institut für Infectionskrankheiten in Berlin has made its influence felt the world over, and it is to be hoped that America, by following the lead thus shown, may come to occupy the same advanced position in the onward march of scientific medicine which it has long held in many of the more purely practical branches of our science.

THE SHADY SIDE OF THE SURGICAL TREATMENT OF TRACHOMA.[1]

By H. GIFFORD, M.D.,

OMAHA, NEB.

THE surgical treatment of trachoma, which dates back at least to the days of ancient Greece, has had, as you all know, a most enthusiastic revival during the past few years; and granulated lids are being treated with all sorts of inventions and adaptations, from roller forceps to rasps, tooth-brushes, and pumice stone. It is not my intention to discuss the merits of these various methods; any one of them, properly used, in connection with other treatment, gives better results than the treatment with local applications of any kinds of medicines, alone; but the praise of them has been so indiscriminate, and the disadvantages and dangers of the treatment have been so little dwelt upon, that it is high time for the other side of the case to receive more attention. That it may be clear that I have no unfounded prejudice against the surgical treatment of trachoma, let me state that I have been chloroforming my trachoma patients and subjecting their lids to the most vigorous surgical measures, squeezing, cutting, burning, and scraping, according to the case, for nearly seven years; several years longer than nearly all the writers from whom so much has been heard on the subject. Moreover, as nearly one-fourth of my patients, both private and clinical, come to me for trachoma and its effects, my experience cannot be said to be limited. Furthermore, I have no idea of belittling the immense advantage which surgical measures give us in treating the disease. I should not think of trying to do without them. I merely wish to point out that the brilliant results claimed by so many writers are not, as a rule, to be expected, and that disastrous results may follow their use in some, if not all, classes of cases. First, as to the brilliancy of the results. Many writers claim to cure the great majority of their cases in from four to six weeks; these claims, I feel sure, are due to too brief an observation of the cases. The patients feel well and look comparatively well, but if they are kept track of, relapsing will be found to be the rule; and in many cases I have gained the impression that corneal complications are more apt to occur in the relapses following so called cures with surgical means, than when medical applications alone have been employed. Where the diseased tissue is so localized that it can easily be excised, squeezed, or scraped out, a cure can sometimes be effected with one operation; but, generally, after all the surgical treatment that is advisable in the course of a month or six weeks, I find it desirable to have patients continue applications of sulphate of copper for many months, returning occasionally for such further surgical interference as may be required.

With regard to the dangers of surgical treatment, the bad results which I have observed or known to follow it are, first, suppression of tear-secretion, with resulting xerophthalmia; second, ulceration of the cornea, with partial or complete loss of sight. Respecting the first of these, I have seen several cases where, after excision or squeezing out, of the upper retro tarsal folds, the secretion of tears has been decidedly reduced. Most of these patients experienced no serious inconvenience from this reduction. In one old case, however, where the trachoma in one eye was reduced to a few gelatinous bunches in the upper fornix, near the outer canthus, these were squeezed out, and in spite of every precaution to prevent adhesions, the secretion of tears was almost entirely abolished, so that the patient was obliged constantly to use vaseline in the eye to keep it comfortable. It is quite possible that this eye would have become xerophthalmic, no matter what treatment might have been used, but it was a very unpleasant experience to have an eye which I was expecting to make useful and comfortable, made entirely incurable within a few days, as the result of my treatment.

Slight corneal erosions I have seen develop in several cases immediately after surgical treatment of the lids, but as in most of these cocaine had been used freely, it is questionable whether the majority of them should not be laid at the door of the latter. Really dangerous corneal trouble from surgical trachoma-treatment, I have observed only from the aggravation, by the operation, of pre-existing corneal affections. Most writers speak of the rapidity with which corneal complications heal after the lids have been treated surgically, and in the great majority of cases this has been my experience also. Trachomatous pannus, in particular, clears up with great rapidity after proper surgical measures. On the other hand, I believe that non-vascular ulcerations, whether superficial or deep, should be considered positive contraindications to any extensive surgical interference with the lids. Not that they too will not, as a rule, be helped by such interference; for they generally heal promptly; but in rare cases, without our being able to foresee the dangers, they become so rapidly worse after operations for trachoma that the sight is severely injured, or entirely destroyed, before they can be checked. I have had two experiences of this kind and know of three others. The first of my cases was that of a young man with moderate trachoma and nearly clear corneæ, there being only a slight superficial ulceration in the upper half of the left cornea. I excised the upper retro-tarsal folds, put in two stitches on each side, and applied a moist sublimate dressing. On the second day he complained of severe pain in the left eye, and on examining it I found a nearly central ulceration, about one eighth inch in diameter. This healed slowly, when the stitches were removed and hot applications used, leaving considerable permanent impairment of vision. The stitches may have been the cause of the bad result in this case, and since then I have not used them after excising the folds.

Another case was that of a woman, aged forty-two, whose right eye had been lost some years before. The left lids had some trachomatous infiltration; the upper three fifths of the cornea was in a condition of pannus; the lower two-fifths being clear except for a small superficial ulceration near the lower border. Under chloroform, the trachomatous parts of the lids were squeezed out with ring forceps, after which the conjunctival sac was washed out every two hours with a boracic-acid solution. The operation did not involve nearly as much rough treatment as is often required, and the reaction on the part of the lids was no greater than common, but the ulcer became rapidly worse and completely circumscribed the clear portion of the cornea, before the most vigorous measures, including a broad Saemisch cut, succeeded in checking it. As it was, all that portion of the cornea which had been clear became permanently dimmed, and until the vessels began to clear off in the upper part of the cornea, I had a practically blind woman on my hands. I am convinced that if the pannus had not existed on the upper part of the cornea, this, too, would have been involved in the ulceration; but the latter stopped sharply at the border of the pannus, and when the vascularization cleared up, as it soon did, useful vision was restored.

In another case which I have seen, the trachomatous lids of a man aged thirty-three were squeezed out with ring forceps by one of the most competent and skilful oculists of the West, who has had an unusually large ex-

[1] Read before the Omaha Medical Society, January 10, 1894.

perience in the surgical treatment of these cases. Before the operation, the man could see well with both eyes, though an ulcer existed in the upper part of the right cornea. After the operation, this ulcer spread so fast that the man never saw again with the eye; almost the entire cornea sloughed, and when I saw him, some months afterward, the eye was sightless and had to be eviscerated, on account of infection of the interior through the scar.

Another still sadder case, which I have recently seen was that of a middle aged woman from western Iowa, who had had trachoma for years. Finally her physician announced that he had a new and sure cure for her sore eyes, and proceeded to scarify her lids and apply what was probably sublimate 1 to 1,000. From her history, she probably had some moderate corneal complication at the time of the operation; at any rate, she never saw again. Both corneæ ulcerated and sloughed, and when I saw her, five months later, both eyes were hopelessly blind. How many similar cases are occurring all over the country, it is hard to say; such occurrences are not the things that one commonly likes to describe from his own practice, but I have recently noted a case[1] from the practice of Abadie, the ardent Parisian advocate of the tooth brush method of treating trachoma, in which a woman's conjunctiva (not trachomatous but with a conjunctivitis of uncertain origin) was brushed vigorously and the galvano-cautery applied to a granulation tumor of the conjunctiva; whereupon, a slight corneal infiltration which existed at the time of the operation promptly got so much worse that the whole surface of the cornea was reduced to a purulent pulp. The patient is said to have eventually obtained some useful vision of the eye, but for this she certainly had to thank her good fortune and not her surgical treatment. [Since this paper was read, I have learned of a case not included in the above, in which the scarification of the lids cost the patient his eye.]

These cases make it plain, I think, that surgical measures have not simplified the treatment of trachoma; on the contrary, they have made it altogether more imperative that he who uses them should be able to examine the eye with the greatest care and discrimination; and should be prepared, if unusual emergencies arise, to treat them promptly and vigorously. Without these qualifications, the physician had far better stick to the old bluestone and nitrate of silver treatment; for with these remedies the disease can always be improved or held in check, and in many cases cured; whereas, if he uses surgical measures at all freely, while he may, as a rule, obtain more brilliant results, he is liable, at any time, to ruin an eye which otherwise would never be lost.

Medical Practice in Sweden.—In Sweden ten years of study is incumbent on every medical student. They are so particular in that enlightened country to have their medical men thoroughly equipped and "ethically developed" that the practice of homœopathy is forbidden, and every globule of homœopathic medicine introduced into the country has to be smuggled in.—*New York Medical Times.*

Fruit Eating to Cure All Ills.—A new society of cranks has been started by a former lieutenant in the German Army. His name is Boeter. He is the leader of a new "ism," and as such sailed recently from San Francisco to Honolulu. The "Fruitarians" is the name of the new society he represents, and their belief—or rather notion—is, that modern civilization is full of vanities and strange notions, and greatly needs reforming. The members eat nothing but ripe fruit, eschew cooked food of any kind, and drink only water. They are to live in huts, bare of the comforts of civilization, and go naked. Ex-Lieutenant Boeter intends to buy a large tract of land in the Sandwich Islands, or, perhaps, a small island outright, for the purpose of founding a colony.

[1] Annales d'Oculistique, September, 1893, p. 187.

POST-GRADUATE MEDICAL STUDY ABROAD.[1]

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THE student of medicine on the eve of graduation looks forward eagerly, I am sure, to that crucial and final test—practice—which demands that he should competently employ the principles which he has learned, should exhibit the skill of which he claims to be the master, and which in return offers as a reward an honorable success. In his student days the mechanism of the human organism has gradually been spread before him, the mysteries of diseased conditions have been carefully, step by step, unfolded to him, and the potentialities of medicine have been impressed upon him so that all seems simple, clear, and logical. Unfortunately, the realities of practice bring their bitter realizations, and what seems plain and simple when sitting in the amphitheatre often appears dark as Erebus to the beginner standing by the bedside. Even that vast storehouse of vaunted remedies becomes at critical times the charnel house of our hopes, and diseased processes frequently, much to our surprise and at times to our chagrin, assume unexpected phases. This inevitable result is due to the fact that the mind of the student has of necessity been impressed with clear-cut pictures of distinct disease-entities, illustrated by carefully selected cases exhibiting definite types and none of the vagaries of disease. Actual practice, however, is very different, and our patients rarely show the classical pictures of disease. Mistake after mistake will, therefore, be made, and must be recognized before that training which is essential to satisfactory medical work is secured.

The important question, then, is, how is that training best obtained? Undoubtedly the best way is by service in a good hospital, where, under a competent visiting staff, the house physician has abundant opportunity to see and examine patients, watch carefully the course of disease, study closely each individual symptom, and, what is most important, assumes to a very large extent the responsibility for the care of the patient and meets the many emergencies which arise during his term of service, all of which is a most valuable preparation for private practice.

Fortunately our hospitals need no chanticleer to sound their praises. Each of you has had frequent opportunity to see the richness of the clinical material and the value of the services.

To-day, therefore, I shall cursorily speak of the training secured by special post-graduate study which some of you may undertake after your hospital work and others after a few years of private practice. The question naturally arises, where can such work be done most satisfactorily and at the least cost?

Teachers in the large centres of population have recognized this need, and to-day there are flourishing schools for practitioners in New York, Philadelphia, Boston, and in some of the Western cities. The advantages of these native post-graduate schools are that they are accessible, no foreign language must be mastered, the work is especially arranged to meet the needs of the American practitioner, and the physician can easily, without great loss, leave his practice for two or three months to brush up on any special line in which he feels he is weak. The disadvantages are that no large hospitals are attached to these schools, the teaching is to a great extent done with dispensary patients, who are necessarily somewhat unsatisfactory, and with American patients who do not take kindly to thorough examinations by classes.

It has been customary, however, for many American medical students to continue their studies abroad, especially in German-speaking countries. Little need be said of the medical work in Great Britain and France, London and Paris, though great medical centres offer little to the American practitioner. As the hospitals are scattered, much time is lost in going from one to the other, and

[1] A talk given to the Senior Class of the Albany Medical College.

private instruction, as it exists in Vienna, is practically unknown. To the specialist who has mastered the groundwork of his own field, and who is able to fully appreciate cases without instruction, the abundant clinical material of London and Paris is of inestimable value.

It will be well, I think, before describing the character of the medical work in Germany, to consider briefly the German university, and to note in what respects it differs from a similar American institution. Nothing in Germany impressed me so much as the large number of great universities whose fame rests not upon huge piles of stone and mortar, but upon the scholarship and scientific attainments of the men connected with them. Germany, a country only four times the size of the State of New York, has twenty universities, any one of which is sufficient to make a nation famous for scholarship. These universities are state institutions, endowed and controlled by the Government, having similar requirements for entrance, and covering exactly the same ground. The German university differs essentially from the American in that it is purely a professional school, and in no sense of the word "a college." Students before entrance must have graduated from the gymnasium, where the course of instruction has been carried to what would be equivalent to the end of the sophomore year in an average American college. Here the discipline is most rigid and severe, the instruction thorough, and the work practically the same in all the gymnasia. In the university all is changed, and the greatest latitude is allowed the student in his course of instruction and in his attendance upon lectures. The student enters the university to study history, philosophy, letters, theology, medicine, law, etc., because in Germany all candidates for the higher Government service, all teachers in academies, and all professional people, must have had an university training or its equivalent. The student is supposed at his age of entrance, twenty, or more, to know what his life occupation will be, and, therefore, the line of work he wishes to pursue. He accordingly matriculates, pays for, and attends lecturers only upon subjects leading to the end he is seeking. There are no recitations, no calling of the roll, and it is usually a matter of supreme indifference to the professor whether the student attends regularly or not his lectures. The student has a lecture-sheet signed at the end of the term by the professor, and this is the official evidence of attendance at the requisite number of courses of lectures when he comes up for a degree. After having attended the required number of courses of lectures, as shown by his lecture-sheet, the student may try the examination for a degree. For this he has to write a thesis, which he must defend before a committee of the faculty, and in addition prove a number of scientific propositions propounded by them. The severity of the examination is evident from the fact that outside the professions not more than ten per cent. of the students take their degrees. This can be explained, however, to some extent, by the fact that all must, in addition, pass state examinations. As the university degrees are purely honorary, and somewhat expensive, many do not seek them.

The teaching body in a German university consists of the "ordentlicher Professoren," full professors, "ausserordentlicher Professoren," somewhat similar to our adjunct professors, though entirely independent, and the "privat-docenten." The "privat-docenten" need a word of description, as they are characteristic of the German university and play an important part in the instruction of the American medical students. They are young men, thirty to forty years of age, distinguished for scholarship, which has been tested by special examinations involving original research and extensive study. They are permitted, after having thus shown unusual ability, to deliver courses of lectures under the ægis of the university. They receive no salary from the university except the fees of the students who attend their lectures. It is therefore necessary for them either to lecture upon some subject not covered by a professor, or to deliver lectures more attractive than those of the professor.

The professors, adjunct professors, and instructors announce at the beginning of each term (the winter term extends from October 15th to March 15th, and the summer term from April 15th to August 15th) the subjects of their lectures for the ensuing term, and the student selects those which he wishes to hear.

Each professor and instructor lectures upon the subject in which he is most interested, and with which he is therefore most familiar, and regards himself not as one intended to insist upon attendance, to maintain discipline, or to compel students to work, but as a teacher, *i.e.*, one who professes certain opinions, a leader in thought in his field of work, and who is there to direct, clear the way, and incite students to earnest effort in the work in which they are engaged. As there may be, and often are, lectures delivered by the professors, the adjunct professors, and the instructors on the same or kindred subjects, it behooves the professor to keep abreast of the times in his lectures, making them attractive as well as deeply scientific, or he will find his lecture-room deserted for the more brilliant lectures of a young privat-docent.

The adjunct professors and privat-docenten are incited to advanced and original work to attract the attention of that most severe of critics, the scientific world, and thus receive an appointment to a higher position either in their own or in another German university. Another factor in stimulating the professors to a high standard of work is the fact that students rarely complete their course in one university but study in several, courses of lectures taken in one university being accepted in every other. Thus a medical student might study histology and pathology in Freiburg where Ziegler is, obstetrics in Munich under Winckel, medicine in Heidelberg listening to Erb, in Erlangen to Strümpell, or in Berlin under Leyden, Senator, or Gerhardt, and surgery in the same university or elsewhere. This change from one university to another is, I believe, more common among non-medical students, but is still quite frequent among medical students.

The key-note of the German university is freedom in teaching and liberty in learning. This eternal principle, which has made Anglo-Saxon governments and civilizations the most advanced in the world, has given to German intellectual life its present pre eminent position and has elevated its university system to a plane far above that of any other country.

Briefly, then, what is the effect of this system upon the university, and what is the result upon the students? It makes every man completely independent in everything—mode of living, personal behavior, course of instruction. It offers the student complete courses of lectures and abundant opportunity for advanced work on any university subject which he may take or not as he pleases. The result is that there are the two extremes among the students—the workers, who avail themselves of the opportunities afforded, and the others—the dawdlers, the lazy, and the mentally incompetent, who simply idle away their time and fritter their opportunities.

The American college contains exactly the same human elements, as nature is much the same everywhere. With us, however, the attempt is made to get a fair average, and the bright, hard working students are to a great extent held back by the lazy and incompetent, with the result that the best students do not do as much work as they might, while, I am afraid, very little good is accomplished with the others. All of us, I am sure, know many men, utterly incompetent, who have received college degrees for which they did no equivalent work. This same principle of instruction is carried out in the medical schools, modified by the special requirements of the work—laboratory instruction, clinical examination of patients, surgical technique, etc. It is not necessary to speak in detail of the German medical schools; that would require too much time, and in your case is of no special value except in so far as relates to the work that American physicians can satisfactorily do in them.

We shall therefore speak only of post-graduate medi-

cal work, and shall divide the German medical schools artificially into the large medical centres, as Vienna and Berlin, and the smaller, as Heidelberg, Freiburg, Würzburg, etc. The advantages of the smaller university are that living is cheap, tuition is low, and the student enters directly into the German life, and thus has an excellent opportunity to master the German language. The disadvantage is that outside of laboratory work you can get no special instruction, and must take the ordinary lectures and regular instruction given to the students. This, while very good, is not quite what is sought by the American physician, who desires to crowd as much clinical work as possible into a few months. In the laboratories, however, there is always plenty of material, and much work can be done alone with a little help from the professor or his assistants. The advantages of the large medical centres, especially Vienna, are the vast amount of clinical material which can be used, and the special instruction in every subject which can be obtained from trained and well equipped instructors.

The pre-eminence of Vienna as a medical centre is due to its large general hospital. This is, I believe, the largest hospital in the world, and contains about four thousand beds. There are within its walls about ten thousand births a year, and ten to twelve autopsies are made daily in its pathological institute. With a staff of twenty-four full professors, thirty-eight adjunct professors, sixty-two privat docenten, and a large number of trained assistants, it has a teaching body and clinical material unequalled in the world.

The American medical student goes to Vienna not for the ordinary lecture and laboratory work but to receive special training, which is to a great extent especially arranged for him by the privat-docenten and assistants. The privat-docenten receive nothing, the assistants a mere pittance from the hospital. They do not engage in private practice but busy themselves with special investigations and advanced work in the hospital, with the hope that some day they may be called to a professorship in Vienna or in one of the smaller Austrian universities. As they must earn money in some way while waiting, they are allowed to use the clinical material for purposes of demonstration in private courses. These courses are to a great extent arranged to attract the Americans, as they are the foreigners most lavish with their money.

Probably the most satisfactory courses given in Vienna are those on medical diagnosis, and this is due not only to the instruction, but even more to the vast amount of clinical material offered for investigation.

There are in the general hospital about fifteen hundred medical patients; of these all the difficult, unusual, and obscure cases are sent to the wards under the charge of the teaching professors, who have each about one hundred and fifty patients in their divisions. The great mass of ordinary uninteresting cases are placed in wards under the care of non teaching professors. Patients also are frequently transferred from wards under the charge of a teaching professor to other wards when the disease has been thoroughly studied and demonstrated.

The assistants of the teaching professors having this magnificent clinical material are the men who give the valuable courses in medical diagnosis. The members of a course, usually limited to six, go to the wards at a fixed hour, and on a class list find what patient has been assigned to each member of the class. Every man then thoroughly examines his patient for an hour, when the assistant comes and calls on a member of the class to demonstrate his case. He stands at one side of the head of the bed, the assistant at the other, while the rest of the class are grouped about the bed. The demonstrator must give a complete and exact diagnosis, then make a thorough, systematic physical examination, the deductions from which are confirmed, modified, or corrected in every detail by the assistant. After the examination the assistant goes rapidly over the case; grouping together logically the symptoms, making clear the obscure points, discussing the differential diagnosis, and speaking a little about the treatment, though this is usually their weak point. Two such cases are demonstrated every day, and two new cases added, so that each case demonstrated has been thoroughly examined by every member of the class. The value of this work depends upon several factors. First, the cases are all difficult and interesting, selected from a large number, each one of which has been carefully studied for the regular lectures of the professor. Secondly, the patients are exceedingly submissive and rarely object to thorough physical examinations, even when they cause great pain. Thirdly, the instructor is a splendid diagnostician, one who is seeking by his work to create such a reputation that he will be called to a professorship. One of the men under whom I worked was at that time—1891–92—reputed to be the best diagnostician in Vienna, and since then has been appointed a professor in the university. Fourth, the men doing the work are imbued with the true spirit of scholarship, seeking knowledge not in order to pass examinations and to receive degrees, but because of its own intrinsic value. In much the same way courses on other subjects are given, modified by the special character of the subject.

These courses range in cost from 15 to 30 guldens for thirty lessons, a gulden being about 43 cents. The best courses are all about a gulden a lesson, while a very few courses on diagnostic gynecology and operative gynecology on the cadaver cost usually 50 guldens for twenty-four lessons, but in such cases the class is generally limited to four.

One rarely takes less than five courses a day, or more than seven, for which the tuition will range from $9 to $12 per week. The usual method of living is to hire a room by the month, where a light breakfast is obtained, and to take the other meals at a restaurant. One can, however, if desired, secure a room and full board at a fixed price in a "pension." The cost of living depends largely on the personal factor and varies with one's tastes. Some live decently, with economy, for about $24 per month, while others spend, without extravagance, easily, twice that amount. Fair limits per month for absolute expenses, tuition, and board, range from $60 to $100. There are, in addition to this sum, the incidentals—opera, concerts, baths, and personal expenses—which would increase the cost of living from $75 to $150 per month.

The first amount is low, but not the lowest possible, though it is as low as it should be, as one should not neglect to go to the opera and concerts; while the second is a fair allowance, but not at all extravagant.

In Berlin there are no courses given which are just the same as those in Vienna. There are special courses in the spring vacation and just before the winter semester. These last four weeks, and often contain very many members, rendering much individual instruction impossible. During the semesters the assistants are not allowed to use the ward patients for private instruction.

The questions now arise as to the knowledge of German necessary for satisfactory medical work, whether a sufficient acquaintance with the language should first be secured before medical work is begun, or if both may not be pursued at the same time.

Vienna is the only German city where medical courses to any extent are given in English; but these courses are generally the poorer ones, while the best are usually given only in German. Explanations given in English by one having a meagre knowledge of the language are not, as a rule, I think, so satisfactory as when given in German, even if the German of the auditor is decidedly limited.

It may be well to sketch out, rather vaguely of course, a stay of a year to a year and a half abroad, and one of only six or seven months.

In either case as much German as possible should be learned before starting, and it would be wise to read some standard German medical work, as that of Strümpell. If an extended stay is planned, it would be best,

I believe, to spend the first three or four months in a small university town, as Heidelberg, Göttingen, Freiburg, etc. Here the knowledge of the German language should be the first desideratum, while laboratory work and attendance upon clinical lectures would be valuable as German lessons and in teaching German methods of procedure and examinations.

Then, when German verbs were no longer a nightmare, and German construction a hopeless labyrinth, Vienna should be the objective point. Here the specialist in embryo could spend eight or nine months; then, later, two months each in Berlin, Paris, and London, seeing famous men, studying their methods and examining their enormous material. For one who can spare only six or seven months abroad, I believe the result will be better if he gives the first month exclusively to German in some small German town, where there are no temptations to speak English, then go to Vienna, rather than to proceed directly to Vienna. The thought no doubt arises why cannot German be studied in Vienna, the physician taking at first English courses, then, as his acquaintance with German increases, taking those given in German. This can be and is done by a number, but, I believe, not at all successfully.

The temptations to speak English in Vienna are so great that I doubt if any American medical student, except by the greatest self-denial and control, ever learns in Vienna very much German.

The Americans there are so numerous that they of themselves form a little society; they have their church and their social organization, and, as these special courses are almost entirely taken by Americans, all with whom they are thrown in contact are American. One rarely becomes acquainted with the German students in a large university, and thus has little opportunity of learning from them.

The cost of a stay for six months need not, with economy, be more than $450, with $200 additional for the journey to and fro. For a year it can with economy be done for $900, including the journey. If a microscope, instruments, books, and clothes should be bought, or extensive pleasure-trips undertaken, the total would necessarily be much increased.

The best time to go to Vienna is in the spring, April and May. Many Americans, who have studied all winter, leave Vienna at this time, either to return home or to continue work elsewhere; on this account it is much easier to get into the best courses, and this is especially the case if you have a friend in Vienna who will prearrange work for you. Medical work in Vienna is regulated by the ordinary commercial laws of supply and demand, and as the number of Americans is usually very large, epecially in the fall and winter, and the number of desirable courses limited, there is an eagerness to get for one's self and one's friends the best, while others have often to wait for months for the same openings.

It is, however, always an easy thing to start into satisfactory work in Vienna. The Anglo-American Medical Association, whose secretary, the Rev. Mr. Gordon, has done incalculable kindnesses to English-speaking students, gives to new-comers most valuable information as to rooms, board, courses, etc., and introduces them to the older men, who are usually kind in putting the new-comer on the right track.

I cannot bring this short and desultory talk to a close without saying a word about the German professor. You can only become intimate with him in one of the smaller universities; but such an acquaintance is of itself worth a stay at a small university. His kindly welcome to Americans, his hearty greeting "Herr College," and his willing assistance to the earnest student make the stranger feel completely at home. If it be your good fortune, as it has been mine, to make excursions with him, you will find a union of unaffected simplicity and true greatness which will be a remembrance to be cherished, and an ideal to be sought after during the remainder of your lives.

A CASE OF INSANITY DUE TO THE MENSTRUAL FUNCTION — OÖPHORECTOMY — RECOVERY.

By ELIOT GORTON, M.D.,

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In the *Medical News* of May 20, 1893, appeared an article from the pen of Dr. B. D. Evans, Medical Director of the New Jersey State Hospital at Morris Plains, on "Periodic Insanity in which the Exciting Cause Appears to be the Menstrual Function." The doctor closes the article by drawing a few deductions from the case he relates, of which the following is a synopsis: "That in many cases of periodic insanity the exciting cause may be directly traceable to the menstrual function; and, when the attacks are coincident with the catamenial flow, and an apparently normal mental condition prevails between the menstrual periods, removal of the ovaries is justifiable even though there be no pathologic lesion." He cites a case of insanity of eight years' duration, which attained to perfect mental and physical health after oöphorectomy, and it is the purpose of this article to add another case to the literature of the subject, my own views being in perfect harmony with the sentiments above elucidated. The following case is interesting and instructive from every point of view, and not only supports the above deductions, but in its result contains much food for reflection.

The case to be related is that of a young school-girl, aged sixteen, who, when well, was inclined to be very sociable, lively, and even-tempered. Hereditary history of a maternal grand-aunt who died insane. Menstruation had been regular and normal. She was admitted to this hospital on March 23, 1893, with the following history:

She had been attending school until the latter part of September, 1892, when she became very much interested in her spiritual welfare and became converted. Shortly after joining the church her mother noticed that she was not at all like her former self. From a lively, sociable, bright girl she became moody, irritable, worried, and depressed. When questioned by her mother she admitted that it was the weight of her sins that was troubling her.

This condition of depression steadily increased until at Christmas-time, after having on several occasions threatened suicide, she passed into a semi-stuporous state, eating but little and sleeping practically not at all. She remained in this state of stupor for three weeks, when she suddenly began to improve. The improvement, however, was but temporary and of short duration. She again lapsed into a state of depression, but not so profound as in the preceding attack, and, apparently about to recover, she passed suddenly into so violent a stage of mania as to render restraint imperative. At this time she attempted to kill her mother and sister, and succeeded in wrecking much household furniture. Three weeks after this maniacal outbreak she was brought to this hospital.

On admission she was very quiet and lady-like, talked in a rational and consistent manner, and had the appearance of being a thoroughly well girl, both physically and mentally. She was, however, placed under careful observation, but gave no evidence of mental instability until the approach of the menstrual epoch, the latter part of April. As the flow commenced she became profoundly depressed, refused to talk or eat, and for several days was fed with a nasal tube. From this period of depression she recovered in time to pass into a period of exaltation as the June menstrual period approached. She continued in a state of excitement for two weeks, and it is from this time onward that the regular periodicity seems to have become established. Every month thereafter, for a few days preceding and following her menstrual period, she became greatly excited and erotic. Her language during these periods was offensively obscene and profane; her self control was entirely abol-

ished, and she exhibited many delusions, chiefly of an erotic character.

These periods usually were of about ten days' duration, and, as the menstrual flow ceased she began to improve, and in a few days would be apparently well. Then she was extremely reluctant to discuss her former condition, and any questioning in regard to it embarrassed her greatly. She was perfectly cognizant of all that happened during the cycle through which she had passed, and the fact that it was a source of much anxiety and mortification to her, would indicate that she looked back upon her actions and speech from a comparatively sane stand point. To her it was incomprehensible, and she begged to be made well.

In December, 1893, she was subjected to a vaginal examination, with negative results. The ovaries and tubes were apparently in a normal condition, but there was a slight tendency to anteversion on the part of the uterus. During the examination the absence of tenderness was especially noted and commented upon.

February 1, 1894, immediately following cessation of menstruation and consequent return to mental health, she was removed to the Mount Sinai Hospital in New York City, and on February 3d was operated upon by Dr. Brettauer, who removed both ovaries and tubes. With the exception that the left ovary contained a small cyst, the appendages were normal. She made a rapid and uninterrupted recovery from the operation, and at no time did her temperature rise above 100° F.

February 19th she was again returned to our care in excellent physical and mental condition, quiet, rational, and with the abdominal wound entirely healed. For one week after her return she remained quiet and orderly, with normal pulse and temperature.

February 26th, when she should have menstruated, she manifested a tendency to exaltation with a decided erotic impulse. She destroyed a pair of drawers and threw them down the closet. Her movements were so abrupt and nervous as to almost simulate chorea. In her talk she was rational, but inclined to be saucy and irrelevant. This period lasted but three days, and was the last evidence of mental instability she ever presented to us.

At our request she was taken home by her mother on May 31st last, but before leaving was thoroughly and carefully examined. The parts were apparently in a perfectly normal condition, with no evidence of any adhesions or signs of hernia. The scar on abdomen was not at all tender and there was no soreness anywhere.

At the present writing, five months after operation, she has remained perfectly well, mentally and physically, and has not shown the slightest tendency to a return of her abnormal mental condition.

In this case the operation was performed as a *dernier ressort*, and as embodying the only hope the patient had of escaping, not only from her periodical paroxysms, but from that condition from which no mind returns, and into which she was rapidly drifting—dementia. The operation intervened, a serious one it is true, but the patient survived, and is now, and probably will continue to be, a useful member of society. Still, had she died under the knife of the surgeon, will anyone contend that it would not have been better so, than that she should have become a hopelessly demented atom of humanity, and a life-long charge upon the State or her friends?

This case differs from others which have been reported, in that the period of excitement seemed to come on as a result of the preparatory evolution incident to and preceding the menstrual flow. Whether this is due to the congestion which is claimed by competent authorities to always precede this function, is a point to be determined, but to my mind it is conclusive. It is also worthy of note that three days after the flow had become established there was an appreciable lessening of cerebral and motor excitement. This in itself would tend to confirm the opinion that congestion of the parts, concomitant pressure on nerve-supply, and consequent reflex irritation as a result of increased blood-pressure, is at least a factor in causation.

We cannot fail to be impressed by the many and varied psychic disturbances which occur in sane women at the menstrual period, not alone in the delicate and sickly, but in the more robust. When we take into consideration the intimate relation of the brain with every other organ in the body by reason of its direct and reflex connections, it can readily be appreciated how much greater must be the strain in those who are afflicted with a neurotic diathesis. It is, therefore, not a matter of theory, but a matter of fact, that the menstrual function exerts a most potent influence upon the nervous system of woman. Why in some it should be so much more severe than in others, and become in itself an element of shock or stress so great as to dethrone reason, can only be conjectured. No two organizations are precisely similar, and so many other elements, such as physical health, environments, heredity, etc., must be taken into consideration, that in many cases of insanity where menstruation is normally performed, it is well nigh impossible to say with any degree of certainty that this function is the cause, pure and simple, of the insanity.

Admitting, however, that in the cases under consideration the menstrual function is simply the exciting cause, where this function exerts so profound an impression upon the nervous protoplasm as to induce insanity; where, instead of acting as a "safety-valve" it becomes the cause of mental explosion; then it is, in my opinion, the imperative duty of the physician to advise the artificial production of the menopause. Especially will this obtain in those cases in which the cause may be directly traced to disorders of menstruation, and in which there is an hereditary taint.

And in this connection let me quote a few lines from Bevan-Lewis. He says, "Given an organism predisposed by inheritance to insanity, such predisposition will tell with special force at periods of reproduction and development."

I am not one of those who hold the sexual organs of woman responsible for the majority of her ills, and I deprecate as much as anyone the abuse of abdominal section. I maintain, however, that death is preferable to chronic insanity, and in view of the remarkable and brilliant successes achieved by the surgeon along this line, I am convinced that we have a field which has been but little explored, and one which offers bright inducements as regards the cure of insanity by the removal of the cause; and I need only add that the consensus of opinion of many well-known writers confirms the statement that the menstrual function is the cause of insanity in a large number of cases. Pozzi says "the sexual apparatus is not, so to speak, an accessory wheel in the female mechanism; it is, on the contrary, the chief wheel, and it is to secure its proper action that constant economies and reserves are made by nature."

Dr. George H. Rohe, in an article considering the legal aspect of this subject, published in the *Medical and Surgical Reporter* of July 15, 1893, reports the result of twenty-two oöphorectomies embracing different forms of insanity. There were twenty physical recoveries and two deaths. Of this number four made an absolute, and three a partial, mental recovery. In seven there was decided mental improvement.

I am confident that I have seen several cases become hopelessly demented, or so deteriorated mentally as to be beyond medical or surgical aid, which, had ovariotomy been performed, would have recovered their reason. There are cases under observation to-day which I am positive would be greatly benefited, if not permanently restored mentally, by such an operation.

Under these circumstances it seems to me that it ceases to be a question of whether or not oöphorectomy is justifiable.

I maintain that it should be done in all those cases in which the menstrual epoch acts as the exciting cause of insanity, and the earlier the operation is performed the better for the patient and for posterity.

TREPHINING THE FRONTAL BONE FOR CHRONIC HEADACHE.[1]

By J. MARSHALL HAWKES, M.D.,

NEW YORK.

GENTLEMEN:—The case which I am about to present to you, I am sure will prove interesting; for while the affection is rare, when we do find it its incurability is exasperating. Moreover, it is in a comparatively new field of surgery, and, still more important, the treatment in this and two other reported cases has been entirely successful.

On June 31, 1891, Mr. M——, aged twenty-eight, applied to the writer for relief from headache of twenty years' duration.

The history of the case is as follows: When eight years old, while playing in a yard in the downtown tenement-house district, he fell on a curbstone and received a cut in the upper right quadrant of the forehead, about an inch above the supra-orbital ridge and parallel with it. His mother took him to the nearest druggist and had the cut dressed with adhesive plaster, after the manner of the time. The cut suppurated and healed slowly. He soon began to suffer from headaches in the upper right frontal region. They increased in severity during his youth and young manhood, until they became quite unbearable. Indeed, he was unfitted for work at least one day in the week, and frequently for two days. These headaches were practically continuous. If he awoke in the night he felt the pain, and it was subject to frequent exacerbations, accompanied by "attacks," as he termed them. These attacks consisted of a severe paroxysm of pain, accompanied by dizziness, making him feel very weak, so that he would usually, though not always, fall wherever he happened to be.

At no time during these attacks did he have a convulsion or even a slight convulsive twitching. He was never unconscious, always knowing everyone about him. He never vomited, nor bit his tongue or cheek; he never hurt himself when he fell, nor did he ever fall in a dangerous place, though he frequently remarked to his friends that it was strange that he did not. He always had a premonition of an attack. No exciting causes were apparent, though he declares if the wind blew hard in his face the headache would become worse. He had them when a boy in school and after he began to work. Again and again he had to be led home by his fellow-workmen or sent home in a carriage. He had no more "attacks" when he was working than when he was not. He had never had any illness, not even measles.

The treatment of various physicians and attendance at two of the city hospitals for varying lengths of time, had not produced any amelioration of his condition, and, at the time he came to me, his condition so preyed upon his mind that he feared he would become insane.

On examining his head in the region above indicated, a small indentation, scarcely an eighth of an inch in length and of only slight depth, was found, and it was only after questioning the patient at great length that he remembered exactly when he received the injury as above elicited, though he was positive of his age (eight) at which the headaches began.

Since the accident had happened so long a time before, and because the writer could learn so little of his previous history, it was deemed only prudent to eliminate the various other causes of headache, such as eye-strain, stomachic derangement, disease of the kidney, etc. He was therefore sent to Dr. Knapp, who examined his eyes and found them both normal. He was dieted most rigorously on milk and the whites of eggs for some time, without any relief.

As no trouble could be found and all medical treatment was unavailing, the impression became more and more fixed that the inner table of the frontal bone had been fractured, and that the resulting exostosis, or possibly a pacchionian granulation pressing on the brain, was the probable cause, and that trephining might give him relief; certainly nothing else would. He readily consented, and on July 30, 1891, a semicircular incision was made surrounding the scar tissue marking the seat of the accident. When the scalp was turned back there was seen to be a slight depression in the skull not over half an inch in length. Following the surgical indication, the trephine point was placed in the centre of this depression and a disk of bone, three quarters of an inch in diameter, was removed. On examination, this disk was found slightly thickened at its upper margin, where normally it should have been slightly thinner. There was, however, no well-defined mark of fracture. As the dura mater appeared perfectly normal, there was no call for further search. The trephine hole was carefully burnished, every rough particle being removed, so as to leave no possible chance for irritation. The scalp wound was then carefully sutured with black, iron-dyed silk; no drainage was deemed necessary.

In five days the stitches in the integument, thirty-seven in number, were removed. At the first dressing, on removing the bandage, release of the pressure caused the patient to have a slight epileptiform seizure; the twitching of the body was general. Conjecturing that the sudden removal of pressure was the probable cause of the trouble, gentle pressure was made upon the area representing the uncovered portion of the brain, and at once the spasm ceased. The wound united promptly and in seven days the patient was on the street.

From the moment of etherization until now, the patient has had no headache. He expresses himself as very much delighted with the result. He goes so far as to say that he is "beginning life anew."

The hole in the skull has nearly filled with a fairly dense fibrous tissue, through the centre of which, however, the pulsation of the brain can still be seen and felt.

On looking over the literature of the subject, I find only two similar cases reported; one by Mr. Horseley, of London, and the other by Dr. Robert F. Weir of this city. Reference is made to both these cases in Dr. M. Allen Starr's "Brain Surgery," page 272. In these two cases there is a history of a blow, but there was no sign of fracture in either of them.

As to the indications for trephining for chronic headache, Mr. Horseley thinks (and it appears to be the general consensus of opinion) that "it is justifiable to trephine in every case where the pain is persistent, localized, and has resisted all medical treatment, whether there be any fracture or not."

Occasionally, after blows on the head without fracture, there will develop pacchionian granulations, which in themselves may cause the persistent headache.

In virtue of the extremely low mortality from a carefully performed trephining, there seems to me to be no contra-indication to the operation as a last resort in cases of the above character.

1343 LEXINGTON AVENUE.

[1] Read at the June, 1894, meeting of the New York County Medical Association.

Dr. Eduard Sperk died a short time ago in St. Petersburg. He was one of the leading physicians of Russia at the time of his death. The first twelve years of his professional life were passed in Eastern Siberia, where he was government physician and afterward medical inspector. In 1870 he was recalled to the capital to take charge as physician-in-chief of the Kalinkin Hospital. He devoted much time to the study of prostitution, and had written much on the subject.

Spring Knee.—Dr. Delorme describes, in the *Gazette des Hôpitaux*, No. 42, 1894, a condition in the knee similar in its general features to the well-known spring finger. Just before full extension of the joint is reached there is a slight hitch, and then the limb straightens itself with a sharp, rather painful jerk. Locomotion is in consequence rendered uncertain and painful. In the case observed by the author upon which his description was based, the interference with free extension occurred only when the patient was on his feet.

Progress of Medical Science.

The Coexistence of Infectious Diseases.—Dr. Caiger, at a recent meeting of the Epidemiological Society, presented a study on the coexistence or close succession of two or more infectious diseases in the same individual. His experience at Stockwell, he said, had satisfied him that such concurrence of infections was as frequent as mere probabilities would explain, and that, so far from affording protection against other diseases, some certainly increased the susceptibility thereto. (*The American Journal of the Medical Sciences.*) In the last four years he had seen 362 cases of two and 17 of three diseases running some parts of their courses concurrently; in 200 of these the acute febrile stages of two or three coincided. The priority of the several diseases was calculated from their known incubation periods. The primary disease was scarlatina in 197, which was complicated by diphtheria in 97 cases, varicella in 43, measles in 31, whooping-cough in 13, erysipelas in 10, enteric fever in 2, and typhus in 1. Scarlatina was a complication in no fewer than 88 among 97 in which the primary disease was diphtheria; in 20 among 23 of varicella; in 14 of 17 of whooping cough; in 6 of 9 of enteric, and 9 of 18 of measles, though here diphtheria accounted for another 7. Among the 17 triple attacks scarlatina was the primary disease in 9, and a complication in 4 only, diphtheria holding the highest place with 9. During the past six years, 48,367 cases of scarlatina had been admitted into the hospitals of the Asylums Board; of these 3,166, or 6.54 per cent., were complicated, 1,094 with diphtheria, 899 with varicella, 703 with measles, and 404 with whooping-cough; the relative numbers of diphtheria and whooping-cough being probably owing to the fact that many had already had whooping-cough in infancy, while diphtheria, though less frequent, might and often did recur; these four diseases accounted for 3,100, or all but 66. The questions suggested by these figures were: 1, Did any disease render the individual less or more susceptible to infection by another? 2, Did the primary disease in any way influence the course or character of the secondary one as regards (*a*) incubation, eruption, etc., periods; (*b*) severity of the disease; (*c*) distribution of local phenomena; (*d*) liability to sequelæ and other complications? The conclusions at which he arrived, after eliminating the influence of age incidence, seasonal prevalence, actual frequency, etc., were first, that there was no such thing as antagonism between any, but rather the reverse, increased susceptibility being brought about, generally or locally; that is, first, by the lessened power of resistance induced by a disease attended with grave constitutional disturbance; and, secondly, by the local inflammations facilitating the development of the contagia of diseases known to affect the mucous membranes or tissues in question. Thus, an attack of varicella exerted no influence on any that might follow, but when scarlet fever was the primary disease, varicella, favored also by the quasi-dermatitis left behind, might rival unmitigated small-pox in intensity of fever and extent of eruption. Scarlatina was frequent and dangerous after diphtheria, but diphtheria following scarlatina was still graver, since the scarlatinal throat, teeming with staphylococci and streptococci, was a perfect soil for the bacillus of Loeffler. So, too, while the general phenomena of measles might be aggravated by previous diphtheria or scarlatina, and in the latter conjunction the rash would be intensified, an attack of diphtheria following on measles was even graver than the post-scarlatinal, since it inevitably attacked the larynx and trachea, and tracheotomy was very rarely of any avail. Measles and whooping-cough were known to follow one another, or to coexist, mutually increasing the susceptibility of the individual. The author had never found the incubation period of a disease affected, but the presence of scarlatina accelerated the appearance of the rash in measles by a couple of days.

Cystitis in Patients who Have never Had an Instrument Passed.—Since it has been recognized that all cases of cystitis are the result of infection, the catheter has been regarded as the only method by which the infection of the bladder takes place. While this method ranks first in importance, it is important to bear in mind that, apart from tuberculosis, cystitis may and does occur in individuals who have never been catheterized, and who have never had either a urethritis or infective disease of the kidney. According to Dr. Reymond, one not uncommonly meets with cases, usually advanced in life, the subjects of enlargement of the prostate, who have never been catheterized, and who have never had symptoms pointing to infective disease of the kidney; in whom, however, there are symptoms of cystitis, and the urine contains pus and micro organisms. Where does the infection come from? Whence are the organisms derived? Bacteriological examination of the urine in seventeen cases showed that the bacterium coli commune was present in seven, and that other microbes were present in ten. The latter were such as are normally met with in the urethra, and it is assumed that they reached the bladder by a simple extension backward, the conditions which enabled them to lodge and give rise to cystitis being the residual urine in cases of prostatic enlargement. Those in which the bacterium coli commune was found were more acute in their clinical features. Of the three possible routes by which they entered the bladder, the urethra and ureter were regarded as unlikely. The author believed that they might have passed from the rectum and through the prostate.—*Annales des Maladies des Organes Genito-Urinaires.*

The Dangers of the Long Rectal Tube.—The use of the long rectal tube in obstruction of the bowel has never been looked upon with favor by anatomists. Nothing is more difficult than the successful manœuvring of the rectal tube through the turns of the sigmoid flexure. The question of the value and safety of this tube having been asked of the *British Medical Journal*, the matter was referred to Mr. Harrison Cripps, who replied as follows: Traditions die hard, and notwithstanding the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, I still find that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately these tubes are fairly soft, so that in a capacious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used the patient's life is placed in imminent risk. A patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube. The injection never returned. A few hours afterward, owing to the acute symptoms of the patient, I assisted one of my colleagues in opening the abdomen. The soap and water and oil we found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum. The patient died. The idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treating stricture beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present it would be 100 to 1 against the long tube or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagination of the stricture. If a stricture be not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lectures, alludes to a case in which a worthy practitioner had spent over 150 hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A PLEA FOR PUBLIC ANÆSTHETIZERS.

To an observant spectator of operations in our hospitals it is a matter for surprise and wonder that fatal accidents so rarely result during the administration of anæsthetics. No stronger argument could be furnished to the advocates of the use of ether in preference to that of chloroform than the fact that the former is recklessly administered in hundreds of instances by inexperienced anæsthetizers, yet without any immediate ill consequences. We use the word "immediate" advisedly, because we are convinced that not a few of the fatal cases of acute pulmonary and renal troubles which have followed ether-anæsthesia might have been avoided, not by substituting chloroform, but by administering ether in a proper manner, instead of saturating the patient with it. Strange as it would appear to an intelligent layman, hospital surgeons continue to delegate this important duty to junior assistants, dressers, and medical students, even in the most serious operations, in which the constant and skilful surveillance of the patient is a matter of vital consequence. Occasionally a serious lesson is given, but it is rarely heeded, until a sudden death on the table leads to a temporary reform.

We are not exaggerating when we affirm that the average junior interne does not take the trouble to make a scientific study of the variations in the pulse and respiration ratio, the changes in the pupils and muscular reflexes, etc., in a perfectly healthy subject, while the danger signals in the case of weak patients are often unheeded, or are not recognized until the close of a long operation, when the patient is in actual collapse. Then there is a hasty resort to powerful hypodermatic stimulation, strychnine, digitaline, or strophanthine, being repeated at dangerously short intervals, which would have been unnecessary if a hot saline enema containing whiskey had been given before or during the operation.

The entire responsibility of watching the pulse devolves upon a young fellow, fresh from the medical school, whose knowledge is almost entirely theoretical, however great may be his natural aptitude and powers of observation. The rest of the house-staff are expected to devote their attention entirely to the operation, and it must be admitted that the junior's mind is too often absorbed in its details.

The proper administration of ether is really an art which few men seem to acquire to perfection. Witness the annoyance so often experienced by surgeons in private operations, when, from courtesy or necessity, the administration of the anæsthetic is entrusted to the family physician, who, with the best of intentions, either pushes the anæsthetic to the limit of asphyxiation, or allows the patient to struggle and vomit.

We are far from asserting that the young gentlemen, who by their zeal and fidelity add so much to the pleasure and profit of our hospital services, do not in many instances become expert anæsthetizers, but this requires time, so that, as a rule, they have only become really proficient when they are replaced by green men. If this criticism applies to the giving of ether, how much more forcibly does it apply to the administration of chloroform! Doubtless this valuable anæsthetic would be employed much more frequently in New York than it is at present if surgeons had sufficient confidence in the skill and experience of the anæsthetizer. In our own experience we have substituted ether in cases in which chloroform was clearly indicated, simply because we did not feel justified in entrusting the more dangerous anæsthetic to one who was entirely ignorant of its physiological action. Personally we would almost prefer to run the risks of employing ether in a case of suspected renal or pulmonary trouble, than to incur the equal risks of having the patient killed by chloroform.

Now this state of things ought not to be allowed to continue. We believe that the time will come when every large hospital will have a regular salaried anæsthetizer, who will always be available, and who will enjoy the same confidence in his department as the pathologist does in his own. Operations will certainly proceed more smoothly and safely; we shall hear of fewer deaths from "heart failure;" and cases of "ether pneumonia," and of "acute uræmia from ether," will be almost unknown. The advantages to the operator will be immense. Instead of having his mind distracted by the struggles of a half-anæsthetized patient, or being obliged to stop his work until she is revived from a condition of asphyxia, he will be able to give his entire attention to the operation, relying on the anæsthetizer to note the danger signals, to administer stimulants when they are needed, and to keep him informed as to when he must hasten, or when he can proceed deliberately.

If the expense involved in the employment of a special anæsthetizer is an objection (and we admit that managing-boards are apt to prick up their ears at the mention of any extra outlay in the medical department), we suggest that a subscription-list might be started among the members of the medical board, all of whom will doubtless have, at some time, suffered from the results of the mal-administration of anæsthetics.

In closing we cannot refrain from alluding to a dangerous practice which we have noticed in some hospitals, that of allowing a nurse to hold the ether-cone while another patient is being anæsthetized. This is a dangerous custom (to which we plead guilty), and in the event of medico-legal investigations would be extremely difficult to justify in a court of law. As a fact, considerable stress was placed upon this point in the case of Dr. Mary Dixon-Jones *vs.* the *Brooklyn Eagle*.

Habitual good luck engenders carelessness; but there is no more striking example of the inconsistency of human nature than the fact that, while modern surgery demands the most scrupulous attention to details with regard to the preparation of the patient and the technique

of the operation, there has been no corresponding improvement in this country in respect to the administration of anæsthetics.

THE CURES OF MUCOUS ENTERITIS.

M. Germain Sée has so many cures for muco-membranous enteritis, that it seems impossible any one suffering from this usually intractable disease should fail to get well. First of all, M. Sée gives purgatives, and his purgatives comprise flaxseed, senna and hydrastis, castor-oil, and olive-oil. As to flaxseed, he tells us that the patient, immediately after each one of the three principal meals, should take a tablespoonful of pure flaxseed, placed for three or four minutes in a quarter of a glassful of cold water. If the flaxseed is objectionable to the patient, it can be substituted with psyllium. These substances are sufficient in themselves, in the majority of cases, to produce movements of the bowels, without having to resort to the administration of the various mineral waters, some of which, owing to the sulphate of sodium present in them, often give rise to constipation afterward.

Senna and hydrastis are given according to the following formula:

℞. Alcoholic extract of hydrastis canadensis..... gr. xxx.–xxxiv.
Senna leaves bathed in alcohol..... ʒ jss.
M. and make 50 pills. Sig.: 1 pill after each meal.

Every now and then other things are suspended and a dose of castor-oil is administered.

Olive-oil is given either by itself or in sugared tea, in doses of from three to four dessertspoonfuls the first day, morning and evening; the second day at noon, the same dose before the second meal; the third day, a glass at the same hours; and the fourth day, a whole glass at once. After this the patient must rest for four or five days—that is, the medication should be suspended, to be again renewed as prescribed. If the first trial shows a non-tolerance of the drug on the part of the patient, the method must be abandoned. Generally, however, the oil is well borne, more so than may be supposed, and "in these cases the muco-fecal movements produce an unexpected relief and sometimes a cure, at least for a considerable time."

Next, M. Sée gives sedatives, and usually in the form of bromides. But the bromides of calcium or strontium must be given, and not those of potassium or sodium, since the latter, he says, irritate the stomach. In our experience the others do so to just about the same degree.

Sée's formula is:

℞. Bromide of calcium,
Chloride of calcium.....āā ʒ ij.
Distilled water .....Oj.

In default of the bromides, he prescribes cannabis indica, as follows:

℞. Solution of gum arabic .... ʒ iv.
Extract of cannabis indica..... gr.ij.
M. Sig.: Three tablespoonfuls per day, one before each meal.

If great pain is present, one of the best modes of producing relief is the administration of menthol in the following manner:

℞. Menthol..... gr. ij.–iij.
Distilled water..... Oss.
Alcohol.....q. s. to dissolve the menthol.
M. Sig.: Two tablespoonfuls by the mouth t. i. d.

To diminish fermentation M. Sée knows of three efficacious means only by which to meet this indication, and he is in the habit of combining them. The first is the administration of the phosphate of sodium, which he places above any other antiputrefactive or absorbent substance. With from forty-five to sixty grains of phosphate of sodium a day he obtained "remarkable results." The amount of the drug is divided into three parts, each one of which is ordered to be taken in a little water, after meals.

For flatulence, the best remedies are salicylic acid in doses of three grains, and salicylate of sodium associated with six grains of the phosphate of sodium. These drugs will at the same time diminish the sensibility of the mucous membrane. Borate of sodium or borax is an excellent substitute for the agents mentioned, and it particularly aids the digestion of milk.

Yet, M. Sée's salicylic acid surely is irritating to the stomach, and despite all the remedies mentioned most cases of the disease, according to text books, do not get well. However, we present the views of a hopeful therapeutist, and trust they may prove useful to our readers.

NAVAL HOSPITALS.

So much interest surrounds the Government hospital care of the sailors when laid off from disease, but more particularly when disabled from injuries received in action, that we pick up with feelings of obligation to the author a brochure entitled "Notes on Naval Hospitals, Medical Schools, and Training Schools for Nurses," by Dr. J. D. Gatewood, Passed Assistant Surgeon, United States Navy. A sketch of hospital history prefaces a series of interesting accounts of these special hospitals in England and France, and then follow descriptions of the institutions at Portsmouth, Chelsea, Brooklyn, Philadelphia, Washington, Annapolis, Norfolk, Pensacola, Mare Island, and Yokohama, under the care of the medical department of the United States Navy.

In the absence of a complete treatise upon the subject these "Notes" are welcome, and aside from their value for the historical data contained, the plans which are given of nearly all the structures described make the architectural feature one to be consulted by those interested in such matters.

Smuggled Opium.—It is estimated by the Canadian authorities that at least 100,000 pounds of opium, refined in British Columbia, are annually smuggled into the United States.

Women Doctors in America.—According to a statistical report drawn up by M. Louis Frank, of Brussels, there were in 1893 on this side of the Atlantic fully 2,000 women practising medicine in one or other of its forms and inclusive of 130 homœpathists. The majority were ordinary practitioners, but among the remainder were 70 hospital physicians or surgeons; 95 professors in the schools; 610 specialists for the diseases of women; 70 alienists; 65 orthopedists; 40 oculists and aurists; and finally 30 electro-therapeutists. In Canada there is but one medical school exclusively devoted to the training of medical ladies, but in the United States in 1893 there were ten, one of them being a homœopathic establishment.

News of the Week.

The Plague Bacillus.—In *The Lancet* of August 11th is a short description, accompanied by illustrations of preparations made by Drs. Lowson, of Hong Kong, and Kitasato, of Japan, of the plague bacillus discovered by the latter. According to Dr. Lowson's description, the organism—which is a bacterium resembling the bacilli found in the hemorrhagic septicæmias, except that the ends are somewhat more rounded—when stained lightly appears almost like an encapsuled diplococcus, but when more deeply stained it has the appearance of an ovoid bacillus with a somewhat lighter centre, especially when not accurately focussed. When, however, it is focussed more accurately it is still possible to make out the diplococcus form. It is quite possible that the capsule has been produced artificially, though in one of the preparations shown this does not appear to be the case. The positions in which it is most frequently met with—sometimes apparently in almost pure cultures—are the glandular enlargements which occur in the groin, in the axilla, and in the neck, though these enlargements are not always met with in the rapidly fatal cases. These enlarged glands are intensely congested, or rather they appear to be infiltrated with blood. In this blood, which is in a state of disintegration, mixed with the elements of the glandular tissue which are also broken down, the organisms are exceedingly numerous. They are also met with in considerable numbers in the spleen and in the other organs, in those positions where there is a slowing of the circulation as it passes through capillary networks or sinuses, and are found even in the blood in the heart and larger vessels.

The British Medical Association in Montreal.—At the annual banquet of the Association, Dr. Osler, of Baltimore, speaking for the visitors, suggested that the Association meet in Montreal in the near future. All who attended would, he assured them, receive as hearty a welcome there as did the members of the British Association for the Advancement of Science a few years ago.

The Antitoxin Treatment of Diphtheria.—At a recent meeting of the Berlin Medical Society, Dr. Katz read a paper on the antitoxin treatment of diphtheria in the Kaiser Friedrich Children's Hospital. Since the opening of the hospital there had been treated by the usual methods 1,081 cases of the disease, with a mortality of 38.9 per cent. Since the middle of March of the present year 128 cases had been treated by antitoxin injections with a mortality of but 13.2 per cent. The doses of antitoxin employed varied from 5 to 20 grammes according to the severity of the case. No injurious effects of the drug upon the heart or kidneys were observed.

The Chinese Fire upon the Red Cross.—The London *Daily Telegraph* says that it is stated on high authority, that in the recent combats near Seoul the Chinese fired upon a Japanese ambulance carrying men who wore the Geneva cross. They killed a doctor and some hospital attendants.

Discontinuance of Examinations for the Medical Corps of the Army.—A recent act of Congress has reduced the number of assistant surgeons in the Army from 125 to 110. There are now 115 men in this grade, consequently there are no vacancies to be filled, and no examining board will be convened until the number is reduced by casualty or promotion below the limit mentioned. In the Navy, on the other hand, several vacancies exist in the Medical Corps, and there are not enough applicants to fill them. One reason for this is that assistant surgeons in this branch of the service, when first appointed, are messed with recent graduates of Annapolis, their juniors by several years in age and experience, and it is not until some time has passed that they are eligible for admission to the wardroom.

What Becomes of Old Diplomas?—An advertisement in a daily paper of recent date furnishes a partial solution of the problem as to what becomes of the diplomas of deceased physicians. The advertisement in question offered for sale the diploma of a physician who had recently died. The price asked was $50. The advertiser, when he learned that such a sale would be contrary to law, discreetly withdrew his offer, which he said he had made on behalf of the widow.

The German Imperial Family and Vaccination.—An anti-vaccination committee published a report that the German emperor had refused to allow his children to be vaccinated. After the report had started on its travel an inquiry was made, and it was found to be without any foundation in fact, for all the princes have been vaccinated just as any other children.

Sævitia Secandi.—Dr. O'Reilly, of St. Louis, recently appealed to the Board of Health of that city to exert its authority to prevent the wholesale mutilation of women at the hands of local surgeons. It was stated that many laparotomies were performed without the shadow of an excuse, and that these so-called surgical operations had but the semblance of legality in their performance to keep them out of the category of attempted or actual manslaughter. The *St. Louis Medical Review* admits that Dr. O'Reilly was justified in his appeal to the authorities, and that unnecessary operations on the abdominal and generative organs of women are scandalously frequent.

Anthrax in London.—During the past twenty years 118 cases of anthrax have been reported to the sanitary authorities in London. Of this number, 90 were in persons engaged in the hide and skin trade, 5 in persons engaged in slaughtering animals, 7 in persons engaged in the manipulation of horsehair or the manufacture of brushes, one was employed at a bacteriological laboratory, while in 15 instances the source of infection was not traceable. The number of cases among tanners shows a progressive decrease, due, it is said, to the fact that wet hides are taking the place of dry hides in the trade.

Dr. Cornelius Herz, of Panama Canal notoriety, who has been living in England since the trial of De Lesseps and others, has been condemned by default to imprisonment for five years, and to pay a fine of 3,000 francs. The sentence will be executed, if the French authorities can apprehend him.

Alcohol Free of Duty.—The Senate tariff bill admits free of duty alcohol to be used in the arts and for medicinal purposes. After its passage another bill was introduced in the House repealing this clause, but it has been shelved with the bills remitting the duty on sugar and raw materials.

Dengue has been epidemic at Key West, the disease appearing first among the troops and then spreading to residents of the island.

Not a Candidate for Congress.—The editor of this journal is not a candidate for Congress, as announced in various contemporaries. His name will not be mentioned in the convention which will be held on this date. The editor, however, cannot refrain from expressing his sincere thanks to those of his contemporaries who have kindly and favorably noticed his candidacy as announced in the secular press.—*Journal of the American Medical Association.*

The Woman's Hospital in Seoul.—In this hospital, the first of its kind in Corea, 2,765 patients were treated during 1893. Of this number 119 were hospital cases, 2,125 were seen at the dispensary, and 521 were visited at their homes. A large number of the outside visits were upon women of the wealthier classes, as it is not permissible for women of high rank to appear upon the street, although some of them do come in closed sedan-chairs to the hospital. The work has shown a steady increase during the three years that the hospital has been in existence. During 1891, in round numbers, 3,000 dispensary visits were made, 4,500 the next year, and 6,500 (representing 2,215 patients) in 1894, a total of upward of 14,000 visits.

Genius and Degeneration.—Dr. James Weir, Jr., writes that the sentence beginning, "Henry Clay was addicted to an over-indulgence in alcohol," in the article with this title in the MEDICAL RECORD for August 4th (p. 132), should read: "Daniel Webster was addicted to an over-indulgence in alcohol."

Sanitary Science in America.—Dr. de Pietra Santa, editor of the *Journal d'Hygiène*, says that among the United States, Michigan, Massachusetts, and Minnesota rank among the countries of the world in which sanitary science, both theoretical and practical, has made the greatest progress.

The Health of the Pope.—The cable reports that the Pope had an alarming attack of syncope on Sunday last, but that he is now in his usual health. His physician, in an interview with the correspondent of a Berlin paper, stated not long ago that the aged pontiff has no organic disease, and suffers only from the weakness incident to advanced age. His digestion is good and he sleeps like a child.

The Worm Turns.—Actions for malpraxis are so frequent that it is pleasant to hear occasionally that the tables are turned and the doctor is able to recover for slander. Dr. Thorne, an English medical man, has just been awarded damages for slander upon his professional skill by one of his patients. The defendant broke his collar-bone in the hunting-field, and the plaintiff was called in to attend him professionally. In consequence of some disagreement, Dr. Thorne gave up attendance, and advised his patient to go to another medical man. Soon afterward he found that the defendant's charges of malpraxis against him were being freely and publicly discussed, and brought suit for slander. A number of eminent surgeons gave evidence to the effect that Dr. Thorne's treatment was skilful and proper, and the jury awarded him £25 damages.

Treatment of Quinsy.—Dr. S. S. Cartwright writes that the treatment for tonsillitis, referred to by him in the issue of July 28th, was first proposed by Dr. A. S. Hudson, of Stockton, Cal., in an article in the MEDICAL RECORD of September 27, 1890.

The Thermogen is an appliance for keeping up the temperature of patients during an operation, doing away with the necessity of blankets and hot-water bags. It is in the form of a quilted cushion with an arrangement of fine wires inside by which any desired degree of temperature may be maintained by electricity. It was exhibited at the late meeting of the Royal Society in London.

A Life saving Appliance for Miners.—Dr. J. S. Haldane, of England, has invented an apparatus which, it is asserted, will enable miners to live from one to three hours in the after-damp which fills a coal mine after an explosion of fire-damp. The invention consists of a steel case, holding compressed oxygen and a respirator. The whole apparatus is no larger than a safety-lamp. It was shown by its inventor at the meeting of the British Association for the Advancement of Science in Oxford.

The Cholera persists in Eastern Europe, Southern France and Holland. The Czar has countermanded the orders for the holding of the army manœuvres at Smolensk owing to the prevalence of cholera in that vicinity. In Galicia, during the three days ending last Saturday, there were 237 new cases and 129 deaths, and in Bukowina, within the same time, 38 new cases and 21 deaths. The Austrian troops marching through this district to take part in the annual military manœuvres have assisted in spreading the disease. The Roumanian Government has established a military cordon on the frontier to prevent the introduction of the disease from Bessarabia, but as it cannot stop the flow of the infected river Pruth, it is difficult to see what good the cordon will do. Owing to the infection of the Vistula, and the consequent spread of cholera in the eastern provinces of Prussia, the orders for the army manœuvres in the neighborhood of Dantzig have been countermanded. In many of the towns in these provinces the authorities have closed the public baths and forbidden the use of unboiled water and raw fruit. A death from cholera was reported in Bordeaux on August 10th. The case was imported from Marseilles, where twenty-one deaths occurred during the fortnight ending August 17th. Cases are still reported in Amsterdam, Rotterdam, Maestricht, and other places in the Netherlands. A death is said to have taken place from cholera in Chelsea, in the southwestern part of London, and several cases were found among the crew of the steamer Balmore, which arrived off Gravesend from St. Petersburg, on August 7th.

"Intellectual California" is the title of a three volume report of all the congresses and other "intellectual events in California contemporaneous with the period of the Midwinter Fair." The Transactions of the 1894 meeting of the American Medical Association will appear in one of the volumes, which will be ornamented with the portraits of some three hundred of the handsome members of the Association. It is safe to assume that there will be some three hundred medical subscribers to the work.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-second Annual Meeting, held at Bristol, July 31 to August 4, 1894.

Special Report for the MEDICAL RECORD.

FOURTH DAY, FRIDAY, AUGUST 3D.

(Continued from page 218.)]

THE concluding general meeting was held on Friday morning, August 3d. There was a good attendance. THE PRESIDENT, who occupied the chair, introduced Sir Charles A. Cameron, F.R.C.S.I., in a few well-chosen and appropriate remarks.

Address in Public Medicine.—SIR CHARLES A. CAMERON, who was heartily received, then delivered the address in Public Medicine. He said they might claim that medical men stood pre-eminent among those who devised means for prolonging life and lessening sickness. They were the first to show that pure water was indispensable to health, that the efficient drainage of houses and of towns was a prime requisite to the maintenance of the health of communities, that overcrowding spread disease, if it did not develop it, and that the high mortality associated with many industrial occupations might be lessened by the adoption of certain precautions. The lives saved by the adoption of Jenner's sublime discovery of vaccination amounted to millions. In the government of modern communities the medical man played, even from a public health point of view, a very subordinate part, and yet there were many medical men eminently fitted, by their culture, experience, and ability, to hold the office of Minister of Public Health, aye, even with a seat in the cabinet!

Mortality rates in Town and Country.—In 1893 the mortality rate in the towns was 5.7 per 1,000 in excess of that in the rest of the country. The difference between the rural rate and that in some of the towns was appalling. Why had one British town twice as high a mortality as another, and why was the average duration of life so much greater in rural districts than in the towns? The causes were no doubt highly complex, and many of them were local. Among the poor in all towns birth and death-rates stood highest. Their greater fecundity and high marriage-rates compensated for their enormous mortality. The poorer a man was the more likely was he to marry. It was a remarkable but undeniable fact that a man's desire for matrimony was in the inverse proportion to his ability to maintain a family. Figures showed the appalling mortality of the children of the poor. If the deaths of children under five years of age were excluded, there would only be a difference of about 2 per 1,000 between the town and country death-rates. A large proportion of the lower classes in the towns was underfed, insufficiently clothed, and badly lodged. These unfavorable conditions told most severely upon the very young. As higher death-rates prevailed among the poor than obtained in the case of the well-to-do-classes, an undue proportion of very poor people in a town necessarily caused a higher death-rate than where the poor were comparatively few. This would be the case even where the general hygienic conditions of both towns were much alike. It might be considered that the comparative poverty of towns might be to some extent determined by ascertaining the proportion of the population who were domestic servants. On the whole, they found that in the towns where the domestic servants were very numerous the death-rates were low. The percentage of tenements which consisted each of a single room might, one would suppose, offer an indication of the poverty of a town. He found, however, the most extraordinary differences in towns, salubrious and otherwise, as regarded one-room tenements. In the Scotch towns one-roomed houses were even more common than in England.

In Dublin one-third of the families lived in single rooms. The high death-rate which characterized the denizens of single-room dwellings was largely the result of the miserable conditions of the people themselves, apart from the state of their dwellings. If they exchanged their one-roomed dwellings for four-room tenements, they would still have a high death-rate by reason of their poverty and its concomitant evils, and, he feared, from their intemperance. It was to be regretted that the local authorities still allowed such houses to be built. In Dublin they could not be erected, a by-law directly prohibiting their construction. In Dublin, 2,700 houses had been de-tenanted and closed—about 1,000 of them never to be reopened, without any compensation to the owners. If a municipality were wealthy it could do no better work than providing good dwellings for the artisans and laborers; but if its means were limited, it should look only to the wants of the laboring and still poorer classes. It was in the dwellings of the very lowest classes that the seeds of infective disease were nursed as if in a hotbed. These places were pest spots, and any amelioration of their condition must be a gain to society at large. The corporation of Dublin had been able to provide two-room tenements with separate sanitary accommodation of the most modern style, at 2s. per week, and without loss to the city treasury.

Water Supply.—The disuse of town wells and the filtration of public water-supplies had done much to lessen the urban mortality. The value of filtration through mere sand had until recently been under-estimated; but the researches of chemists and bacteriologists had shown that filtration through sand and gravel can be made almost as perfect as through charcoal. The great importance of water filtration was painfully demonstrated during the last epidemic of cholera at Hamburg. They had not yet determined, in relation to chemical analysis, the line which divided a bad from a good water, nor did he believe that such a line could be drawn. One that contained very little organic matter might be dangerous to drink, while, on the contrary, water with a large amount of organic matter had been drunk with impunity for years. The number of micro-organisms in water was regarded by most bacteriologists as a measure of its purity, regardless of its chemical composition. The epidemic of enteric fever in the Sees Valley in 1890 and 1891, investigated by Dr. Barry, of the Local Government Board, had been held to prove conclusively that this disease was propagated by water. Dr. Barry's conclusions had, of course, been questioned and controverted.

Sewer Air.—The results of recent investigations in reference to the composition of sewer air showed that it was superior, bacteriologically at least, to ordinary air. They could easily understand that in the case of well-constructed and constantly flushed sewers, the air in them would not differ from ordinary atmospheric air. It was the emanations from stagnant sewage in ill-kept sewers that were to be dreaded. The ventilating openings in the streets were generally objected to by those who lived opposite to them. Bristol was, perhaps, the only one of the large towns in which the sewers remained unventilated. As typhoid fever was asserted the most likely to be produced by sewer emanations, Bristol ought to have more than an average amount of disease, if the sewer ventilation theorists were correct. Statistics of the mean death-rate from enteric fever, in the period 1887 to 1891, showed that five towns had smaller rates than Bristol, and forty-four had higher. If Bristol had made a mistake in not ventilating its sewers, it had not apparently paid any penalty, for in the period 1881 to 1890 only one of the large towns had a lower zymotic death rate. He should feel disposed to adopt the Bristol plan, were it not that there might be some difficulty, in some towns at least, in cleansing the sewers. Typhoid fever was not so prevalent in these countries or on the continent as it formerly was, but in some towns typhoid fever had not declined, and in a few it had increased. There was a very general belief that this disease was

almost wholly propagated through the media of water, food, and sewer air; but he believed that the greater number of cases arose from the *materies morbi* of the disease being absorbed from the air. Up to the present, pathogenic micro organisms had not been frequently detected in the atmosphere, but neither had they been found, except rarely, in water or milk suspected to have produced disease. He believed that typhoid fever was a disease of the miasmatic class, and that it became endemic in certain localities in which the conditions of the soil were favorable to the development of the micro-organisms which caused the disease. It had been suggested that the waterlogged condition of Dublin was the cause of the prevalence of typhoid fever, and that the obvious remedy was subsoil drainage. It was, however, a fact that the low lying portion of Dublin, where there was most typhoid fever, was not damp, and that the ground-water lay low there, and that in the parts where the ground-water came much nearer to the surface there was least typhoid fever. The explanation of this was not difficult. The cold, wet clays were unfavorable to the bacillus of the disease, whereas they had better feeding-ground in the loose and well-aërated gravels. It was stated that typhoid prevailed most among the upper classes. This was not the case in Dublin.

The Future of Preventive Medicine.—The domain of public medicine was steadily enlarging in every direction. Surely the time must come when the results of these researches would enable man to extirpate some or all of the diseases which even now were termed "preventable." England had been described by foreigners as the birthplace and home of sanitary science, and it surely deserved the compliment. Never before in the history of the world were thirty millions of people located on fifty thousand square miles, as was the case with the England of to-day. Of these millions two-thirds resided in the towns, which yearly had a quarter of a million added to their teeming population. In Germany forty-two per cent. of the population lived in towns containing two thousand and upward. Only every tenth Russian lived in a town. Notwithstanding the great and continuous increase in its urban population, Great Britain grew healthier and healthier from decade to decade.

Professor Corfield, of London, moved that the thanks of the meeting be given to Sir Charles Alexander Cameron for his able and interesting address. It was due to Sir Charles that typhus had been so effectually grappled with in Dublin, for it was through his efforts that the insanitary dwellings which were the hotbeds of the disease had been swept away by hundreds. The same reason accounted for the failing power of the disease in Liverpool. At the same time there was the matter of the increase of diphtheria. Many causes were attributed to this, and among those which found most favor with the officials of the Local Government Board were the street ventilation of sewers, and the increased aggregation of children in schools. Alluding to the probable dispensing with vaccination, the speaker said that the opposition to this by the medical profession had been attributed to their desire to protect fees, but he prophesied that if vaccination became non compulsory the public would require half as many again medical practitioners as existed to-day.

Dr. Davies (the medical officer of health of Bristol) seconded the resolution, which was carried by acclamation.

The various formal votes of thanks having been given, the President of the Council (Dr. Ward Cousins,) moved a vote of thanks to the President (Dr. E. Long Fox) for his genial courtesy and marked ability in conducting the business of the congress.

Dr. Winterbotham, of Bridgewater, seconded the resolution, which was carried with great enthusiasm.

The President acknowledged this vote with a few courteous remarks.

A motion on the agenda in the name of Dr. T. G. Horder, of Cardiff, advocating an ethical section, was accepted for consideration in the name of the council.

A very cordial vote of thanks to Dr. Markham Skerritt, who had so well fulfilled the arduous duties of honorary secretary, terminated the proceedings.

SECTION OF SURGERY.

First Day, Wednesday, August 1st.

The proceedings of the section were opened by the President, Mr. Mitchell Banks, with a few remarks.

President's Address.—He said that no formal address was needed since Mr. Greig Smith would, on the following day, deliver the address on Surgery. Referring to the progress of modern surgery, he said that in studying the history of the art it was noticeable that those whose names were handed down to posterity were not the introducers or inventors of new methods, nor the brilliant operators, but the steady, practical observers who were content to have as their motto "Festina Lente." In studying of late years modern surgery and its tendencies, it had sometimes occurred to him that we might be going too fast, but he was happy to believe that this tendency, which a few years ago seemed to be strong, had lately been much modified, at any rate in Great Britain. It was our proud boast that the British surgeon, when he stood at the bedside, thought only of the sufferer as a patient, not as so much material for experiment. In surgery it was best to be sure that what was new was also true. Some politician had suggested that it would be an excellent thing for the country if no new laws were made for five years. He would similarly suggest that it would be a good thing for them if no new drugs or new operations were introduced for five years, so that they might study and thoroughly estimate the value of those that they have already. He believed that much time was wasted in the trial of old methods under new names, because they had not been thoroughly tried when originally introduced. He referred to the great harm done by the non publication of many unsuccessful cases, by which a false idea was conveyed of the merits of operations and modes of treatment. There were nowadays certain misguided sentimentalists who, in the lay press and elsewhere, abused modern surgery. These people were antivivisectionists and antivaccinationists, and when their views were a little more obscure and exalted—anarchists. The publicity given to surgical work and to hospitals, managed as they were by charitable and devoted laymen, was their best defence.

Operative Treatment of Perforating Ulcer of the Stomach and Intestines.—Mr. Pearce Gould then opened the discussion on this subject. He said that a good many years ago Dr. Marion Sims showed his keen foresight in prophesying that it would not be long before perforation of a gastric ulcer would be amenable to treatment by surgeons, and cease to be a hopeless condition. Eleven years ago, a distinguished Bristol surgeon (Mr. Nelson Dobson) read a paper in which he maintained that the proper treatment of this complication should be by abdominal section and suture of the opening in the stomach, or if it proved to be impossible to close the perforation, that a gastric fistula should be formed. The reception of these views was not a very encouraging one, but lately surgeons had more and more followed Mr. Dobson's advice.

In dealing with the subject, he would exclude all cases due to malignant disease and disease of the appendix vermiformis, and would first consider perforating ulcers of the stomach and duodenum.

The Pathology of the disease was mysterious. It occurred oftenest in anæmic young women, very often of the domestic-servant class, and less often in middle-aged men. He described the classical symptoms of gastric ulcer which, however, unfortunately formed no sure guide. They were sometimes entirely absent. Statistics showed that eighty-five per cent. of those in whom the existence of ulcer was diagnosed recovered. In 6½ per

cent. perforation and death occurred; five per cent. died from hemorrhage, and the remaining $3\frac{1}{2}$ per cent. died from exhaustion and other causes. Perforation occurred most often in ulcers of the anterior wall. Duodenal ulcers were most common in men. Billroth had recommended that as soon as ulcer was diagnosed a prophylactic excision should be performed, but the speaker did not recommend this treatment. Among other reasons against it were the facts that so many cases recovered spontaneously or under treatment, and that diagnosis was still very uncertain in regard to the position of the lesion, and some cases were so acute and perforation occurred so rapidly, that there was no opportunity of excision. When perforation was followed by escape of the contents of the viscus into the general peritoneal cavity, death sometimes occurred almost immediately from shock. In other cases shock might be almost entirely absent. The success of the operation, he believed, depended more on the complete and thorough cleansing of the peritoneal cavity—abdominal toilet—than on suture of the opening. He related several cases in illustration of this point.

Time of Operation.—The operation should be undertaken as soon as possible after reaction from shock set in, but it was better to wait till proper assistance and appliances needed for the abdominal toilet were at hand rather than to proceed without them. For flushing purposes he preferred boiled water containing one drachm of common salt to the pint (20 ʒ) to any chemical antiseptic solution. The solution should be of the temperature of from 110° to 112° F., and it exercised a marked restorative influence on the patient. Flushing should be done in a regular and systematic manner, and no time should be spared in making it thorough. It was the one essential step in the operation. He thought that excision of the ulcer was a needless and useless proceeding. In every case where peritonitis was well marked he made an incision above the pubes and drained the peritoneal cavity. When from the extent of the disease or size of the opening it was impossible to close it, the stomach should be drained. Seven cases were recorded of operation followed by recovery.

He cited seventeen cases of perforation from typhoid ulceration of the intestine which had been operated on. Of these one recovered. He excluded three cases of doubtful nature, all of which recovered. The ileum was the part affected in most cases, and there was often more than one perforation. It must be borne in mind that perforation sometimes occurred while cicatrization was in progress, and even months after the onset of the fever. Symptoms might be very marked or slight. Spontaneous recovery was very rare. Operative interference was only to be recommended when the fever had subsided or nearly so. With regard to ulcers of the posterior wall of the stomach which perforated, and sometimes caused subphrenic abscess, such abscesses should be opened and drained from behind if possible, or if opened in front a counter-opening should be made for drainage behind; this was almost essential.

Mr. R. Maclaren, of Carlisle, said that he had personal experience of four operations in such cases. Of these three were cases of gastric ulcer, of which two were fatal and one ended in recovery, and one case of typhoid ulcer which recovered, operation having been performed thirty-six hours after the perforation. Simple drainage without suture was all that was done.

Mr. Rutherford Morrison, of Newcastle, said he had operated on one case of gastric ulcer. There was peritonitis limited to the pelvis. The patient died, and at the necropsy it was found that the sutures held, the opening was securely closed. The perforation opened into the lesser sac of the peritoneum. He condemned excision of the ulcer.

Mr. Gilbert Barling, of Birmingham, gave details of several cases showing the difficulties of diagnosis and treatment. He thought that too optimistic a view was taken generally of these cases. Operations for the cure of perforating typhoid ulcers were of very doubtful expediency. If any operation were undertaken it should be as limited as possible. Opium he thought of great value in the treatment of the primary shock and after operation. Suture in typhoid ulcers was not to be advised.

Mr. Ward Cousins, of Southampton, spoke of the benefits of incision and drainage alone. It was remarkable how small a quantity of fluid escaped from the stomach in many cases. This was due no doubt partly to paresis, and hence the value of opium. He believed that flushing was a much more critical procedure than was generally thought. He would do it as sparingly as possible.

Mr. Haslan, of Birmingham, had operated on one case that ended fatally. He would draw a distinction between ulcer on the anterior wall of the stomach which caused general peritonitis, and ulcer of the posterior wall which often caused only localized inflammation. Unfortunately the classical symptoms of ulcer were more often present in the latter class of cases. Shock often came on as late as three or four hours after perforation. The difficulty of the operation was often increased by the rotation of the anterior surface of the stomach upward so as to hide the opening. Having once found the ulcer it was wise not to let it go again, as in his case much time was lost by neglect of this precaution. The edges of the ulcer should be inverted and Lembert's suture used. He would try to empty the viscus through the wound, but would not waste valuable time over it. He was an advocate of very free and prolonged flushing.

Mr. Nelson Dobson, of Bristol, said that although he advocated the operation eleven years ago, he had not had any opportunity of practising it. It was intensely interesting to him to find that his suggestion had been so generally adopted. He hoped, however, that too optimistic views would not prevail and cause the operation to fall into disrepute. He thought it almost futile to wait for shock to pass off. He would operate as soon as he was satisfied of the diagnosis.

Mr. Damer Harrisson, of Liverpool, generally agreed with previous speakers as regarded gastric ulcer. He doubted the occurrence of spontaneous recovery in cases of perforating typhoid ulcer. Diagnosis, especially in the acute stage of the fever, was often very difficult. He described one case in which two ulcers were sutured. Death ensued seventeen hours afterward, and it was found that the sutures still held. He would operate as soon as the diagnosis was made, and flush freely; hot water he believed relieved shock. In one case of typhoid fever in which perforation was supposed to have occurred there was distention and loss of the liver dulness. He opened the abdomen and found no perforation but a kink of the gut. The patient entirely recovered. He preferred to suture the opening in cases of typhoid ulceration.

Mr. Kendall Franks, of Dublin, had operated on one case with a fatal result. Much was to be learned from failures. He would always operate as soon as the primary shock had passed off, and would remove the diseased tissue and pass the sutures through healthy tissue. He thought that the occurrence of a second perforation in one of the cases cited by Mr. Pearce Gould was a silent witness to the truth of his view. Flushing was essential to success, but it was difficult to clear out the lesser omental cavity and the parts behind the liver and spleen.

Mr. R. O'Callaghan, of London, had operated unsuccessfully on two cases. He thought that no other condition in surgical practice showed such early and severe collapse. Early operation was imperative without waiting for reaction from shock. Opium was beneficial in case of shock, but not in collapse.

Mr. Pearce Gould said in reply that he was no advocate for delay, but he would not operate during primary shock when it was present (it was sometimes entirely absent). After the shock was rallied from, and before collapse set in, was the time for operation. As to the free excision advocated by Mr. Kendal Franks, he

said that it was all very well to sacrifice a few inches out of the twenty feet or so of intestine, but it was a more serious and difficult matter to remove a large portion of the stomach-wall and securely suture the remainder, whereas there was no risk of inversion of the edges causing trouble in the case of the stomach as it might in the intestine. As to the actual occurrence of spontaneous recovery from perforation of a typhoid ulcer it had been proved to occur sometimes by Cayley and Murchison's researches. We must beware that, in flushing, septic materials were not driven from the wound into the distant parts of the peritoneum and thus disseminated. Flushing should be begun at the periphery and ended at the wound.

The President in summing up the discussion said that the speakers seemed unanimous as to the question of suture. Washing out of the stomach was needless when the natural drain by the intestines was open. The question of spontaneous recovery was important. It appeared certain that in some cases it had occurred. Flushing seemed to be generally approved of, but of course it might be contraindicated by the patient's condition. Finally he must congratulate the speakers on the temperate manner of the discussion and the moderation of their views. He was glad to think that we were abandoning the ridiculously optimistic views common a few years ago in abdominal surgery.

Mammary Tumors.—Mr. Herbert Snow, of London, read a paper on the dispersal of certain forms of mammary tumor. These were the fibroma of adolescence, tumors due to inflammatory hyperplasia and certain tumors due to dilatation of ducts. The inunction of iodide of lead and mercury ointment four times a day would cause complete absorption of such in a few weeks, and so avoid the scars and other drawbacks of operation. He narrated several cases in point.

There was no discussion on this paper.

Traumatic Delirium Tremens.—Mr. Damer Harrison read a short paper on the treatment of traumatic delirium tremens. He referred to the method popular in Lancashire among colliers' wives to quiet uproariously drunken husbands. They would send out for two pennyworth of "Quietner" (three grains of tartar emetic) and administer it concealed in a pint of beer. He had adopted a somewhat similar treatment, which was really almost the same as the old treatment of fever. After morphine in full doses and chloral hydrate had failed of any effect whatever, tartar emetic, followed by chloral or morphine, produced complete cessation of the delirium, and after its use very small doses of narcotics took full effect. He quoted cases to illustrate this.

Surgery of the Gall-bladder.—Mr. Rutherford Morrison, of Newcastle, read a paper "On some Points in the Anatomy of the Right Hypochondriac Region, relating especially to Gall-stones." He demonstrated by diagrams and drawings the existence of a pouch of peritoneum behind the right lobe of the liver which was of importance in the surgery of the gall-bladder. It should be drained through the parietes immediately below the kidney.

Hernia in the Aged.—Mr. R O'Callaghan read a paper on the operation for strangulated hernia in octogenarians. He said that old people, especially old women, bore operation better than those in the prime of life. He described three cases which were all successful, although in two of them (inguinal hernia) the gut was almost gangrenous, and it was with great misgivings that he returned it, but he decided to do so because the boundary between the congested semigangrenous part and the healthy gut was ill defined, and after long douching with water at the temperature of 110° F. its appearance improved. He laid great stress on these points, as of great practical value. The treatment by enterotomy and the formation of a fistula was unsatisfactory and fatal. In case of gangrene enterectomy, suture, and return of the gut was the best treatment. He used no chemical antiseptics.

Hip-disease in the Aged.—Mr. T. P. Lowe, of Bath, read a paper on the treatment of senile rheumatic arthritis of the hip joint by forcible movements. He selected the hip joint as typical, and because in old people it was the first, and often the only, joint attacked. The symptoms were often mainly those of sciatica. Flexion was generally present, and was maintained by the presence of adhesions which should be broken through, an anæsthetic being given, if necessary, and in severe cases a Thomas's hip-splint should be applied. In mild cases the recovery was instantaneous and the patient could walk at once without pain. To break through the adhesions the patient should be laid prone and the thigh forcibly raised while the pelvis was held down. His experience led him unhesitatingly to affirm that synovial fluid could be restored to a joint which was dry.

Second Day, Thursday, August 2d.

Spinal Surgery.—Mr. W. Thorburn introduced the discussion on "The Surgical Treatment of Injuries of the Spine and Spinal Cord." To begin with, he would classify injuries, dividing them into eight classes as follows: 1, Unilateral dislocation; 2, bilateral dislocation without recoil of the displaced bone; 3, bilateral dislocation with recoil of the displaced bone; 4, fracture without recoil (diastasis); 5, fracture with recoil; 6, injury of lamina or processes; 7, compound fractures; 8, secondary lesions—hemorrhage, meningitis, etc.

After a careful survey and study of the subject his conclusions were that fracture-dislocation and dislocation were not difficult to reduce, but that the chances of recovery of the cord were not much improved thereby. A cord once crushed was incapable of recovery, as was shown by experiments as well as clinical experience. Any apparent recovery was due to vicarious conduction, some parts of the cord having escaped damage and being used instead of those normally employed.

The advantage of reduction simply was that a straight spine was better than a crooked one should the patient recover; but, on the other hand, reduction of dislocation in the cervical region was not without danger to life, and the more dangerous the higher up the injury. Reduction might be said to be safe and useful in unilateral and some bilateral dislocations. When the dorsal region was the site of injury reduction was not often possible.

As to laminectomy, in most cases of injury it was useless because when there was recoil of the bone the lumen of the canal was restored, and there was no pressure in at least two-thirds of the cases, and when there was no recoil, although laminectomy might be possible, yet there was not much hope of recovery, for nearly all the cases, even when there was recoil, ended fatally. When the continuity of tissue in the cord was once interrupted no restoration took place. He had found records of two hundred published cases and had personal experience of seven. In these seven he had seen no material benefit from laminectony in any case. Subsequent improvement was not due to the operation. In compound fractures (such as those caused by gunshot) he would remove fragments of lamina or other bone simply as a part of the wound toilet. When the laminæ were primarily injured operation was useful. There was no natural recoil and the cord was generally less crushed, and while the fragments of bone were usually small they might be doing harm by irritating and pressing on the cord. The gypsum corset was, no doubt, useful late in the case, but he was very doubtful whether it was of use immediately after the injury, while there was danger of the unseen formation of pressure sores and extensive sloughing.

Dr. H. L. Burrell, of Boston, U.S.A., said that he had a basis to go upon of 8 cases of laminectomy of his own and 4 of his colleague's, besides the collected records of 178 cases. The hopelessness of the condition when left to nature was well known and was demonstrated by him in a paper on the subject published in 1887. He then recommended that in all cases of dis-

location and fracture-dislocation an anæsthetic should be administered with as little delay as possible, for irreparable damage was done by allowing pressure to continue even for one hour. The patient should be suspended and forcible rectification practised, and a gypsum corset be applied. By the use of this method he had secured some brilliant results, but since the introduction of operation he had given it up for laminectomy. The do-nothing treatment should certainly be abandoned.

Immediate reduction had increased the recoveries by eleven per cent., and if such a blind method did so much good an operation that enabled the surgeon to see for himself the exact condition and remedy the displacement without doing more than needful must certainly do still more good. He doubted the possibility of an exact differential diagnosis, and therefore would operate on all cases.

Mr. C. B. Keetley mentioned a case in his own practice in which he applied a Sayre's jacket without attempting reduction. The patient entirely recovered. In another case of cervical fracture dislocation produced by diving from a height into a swimming-bath, an æsthesia and paralysis were complete in both arms and legs, but the right arm was somewhat contracted. He operated, removing the laminæ of the third and fourth cervical vertebræ. The lower margin of the fourth lamina nearly touched the fifth body. After removing the laminæ the cord seemed to return to its normal form, and there was afterward some return of power of movement, but the patient died on the fourth day. At the necropsy it was found that the cord was cleanly and completely divided but the dura mater was uninjured. He thought the operation in general was not a hopeless one, but that we should not be eager to operate. The risk of the operation itself was small. The dura mater need not be opened, and thus it was a little more dangerous to operate on a case of simple fracture dislocation than of compound. Still it must be admitted that the operation had its risks. He had operated on another case of fracture in the cervical region, but the patient died almost immediately. The necropsy showed fracture and hemorrhage at the base of the skull.

Mr. Gilbert Barling was quite in accord with Mr. Thorburn. We should beware of reckless operations which would only tend to bring laminectomy into contempt. A knowledge of the nature of the accident would often forbid operation, because we may often be sure from the extreme violence in indirect injury that the cord is divided or pulped, and in that case laminectomy was only "a crude way of administering euthanasia, in which we are not justified." He was quite sure that the operation had its own risks, and therefore it was wrong to employ it indiscriminately. He described two cases, one of direct violence to the side of the neck and arm—palsy, probably due to hemorrhage, ending in spontaneous recovery, and another of great indirect violence causing displacement of the twelfth dorsal spinous process and palsy of the bladder and lower limbs. Now two years after the accident there was complete recovery except for some patches of anæsthesia. This patient refused operation. This was one of the most hopeful cases for laminectomy, yet the operation would not have improved the result.

Mr. Barclay, of Bristol, thought that there was a tendency to be too cautious in these cases, but when there was a displacement of one vertebra from another, with recoil, operation was hopeless. When, however, there was no recoil and obvious displacement we ought to give the patient the chance afforded by laminectomy, and if necessary chisel away the projecting edge of the vertebral body which pressed on the cord. In cases of injury and displacement of a process or processes, if diagnosed, he would operate, but the diagnosis was often difficult. In cases where hemorrhage was diagnosed he would also operate.

Mr. Damer Harrisson said that in his opinion operation was rarely called for; those cases which he had wished to operate on and had been prevented had generally recovered. Fixation was the best treatment for fracture dislocation. He used a box splint, flexed the thighs, and drained the bladder, when it was palsied, by a perineal section, and was thus enabled to prevent decomposition of urine and cystitis.

Sir William Stokes, of Dublin, did not think that laminectomy alone could entirely relieve pressure, because the cord would still be stretched over the projecting body in front. He did not think removal of the projecting body possible without risk of increasing the injury to the cord; operation for direct injury was much more hopeful. He found that these patients did not bear fixation well, and there was great risk of sloughing under the gypsum jacket. He had never found any need of perineal section, but had succeeded in keeping the urine and bladder healthy by the use of boric-lotion injections.

Mr. Reginald Harrison detailed a case showing the benefit of immediate extension. He agreed with Mr. Thorburn and others as to the hopeless injury caused by indirect violence.

Surgeon-Major Hatch was not very sanguine about the operation. He had had five cases at the Jamsetjee Hospital in India; of these one was a case of injury to the cervical region and four of the dorsal region. In the first case there was meningitis present at the time of operation. No improvement followed. The patient died three months afterward. Necropsy showed that there was no pressure, and only slight narrowing of the lumen of the canal. Of the four cases of dorsal injury three died after laminectomy; in two the projecting vertebral body was gouged away without much difficulty and gypsum applied in the prone position; one of these died, the other improved after fourteen days, and was still improving. Of the other fatal cases, one was found after death to have an abscess on the canal below the lesion, the other died at the end of a week. He thought that reduction of the dislocation was not at all necessary. The difficulty of diagnosis was very great, and therefore he would operate to help the diagnosis, seeing that the prognosis was so bad. He did not think that secondary operations were hopeful. He believed there was a future before the operation.

Mr. Jordan Lloyd said that no one surgeon had a large personal experience of such cases. Fractures of the spine varied much in severity. Fixation gave good results. Cases of indirect violence were best left alone (except for fixation), and he would not consider operation in them. Cases of direct injury—generally in the dorsal region—were, however, amenable to operation. He had only operated on one case of recent fracture. The patient died. He would not operate on such a case to-day. He had, however, removed the laminæ of four or five vertebræ, eight years after the injury, for incontinence of urine and fæces, and the patient recovered control of them completely.

Mr. Noble Smith claimed to have benefited a case of fracture by the application of a spinal support pressing on the projecting bone. He had performed laminectomy in one case eight years after the accident. Improvement followed.

Mr. Thorburn, in replying, said that there seemed to be a general agreement as to the facts. There were at least two hundred cases recorded, and probably many less successful cases not recorded, hence, without waiting longer we were in a position to judge of the value of the operation. He could fully confirm what Surgeon-Major Hatch had said as to the feasibility of lateralizing the cord and gouging away the projecting body. A mistake in diagnosing the exact site of the injury was not important, it was easy to extend the incision and go further (generally higher).

Flat-foot.—Sir William Stokes read a paper on flat-foot and described Glück's operation of section of the os calcis and tendo Achillis in order to slide the bone downward and forward. He preferred to this and to

Ogston's operation a cuneiform osteotomy of the astragalus so as to replace that bone within von Meyer's triangle. He showed casts of a foot before and after operation.

Mr. Keetley preferred Ogston's operation, but in a severe case he had had to supplement it by osteotomy of the tibia and first metatarsal bone, thus producing a well-shaped foot; but he was bound to admit that the patient herself preferred the other foot, which was originally equally deformed, and had not been operated on. The pathology of this deformity was most complex.

Traumatic Gangrene.—Mr. Robert Jones, of Liverpool, read a paper on a case of acute spreading traumatic gangrene, treated by amputation and swabbing with pure liquefied carbolic acid. The patient was thirty-two years of age, and had a compound fracture of the forearm. The gangrene spread very rapidly, and at the time of amputation at the shoulder-joint there was swelling and crackling over the pectoral region and above the acromion. The soft parts cut through were dark, congested, and gaseous. There were practically no flaps. The wound and intermuscular spaces were freely swabbed with carbolic acid, and this was repeated at subsequent dressings. Recovery followed, hiccough night and day being the most distressing symptom.

Mr. Jordan Lloyd had a somewhat similar experience in two cases, aged thirteen and fourteen. After amputation he plugged the wounds with lint soaked in 1 to 1,000 sublimate solution and made some sixty inch or half inch incisions into the bronzed and brawny tissues above. Both patients did well.

Œsophageal Stricture.—Mr. Kendall Franks described a case of dysphagia from a stricture of the œsophagus just below the cricoid cartilage. At the operation (œsophagotomy) it proved to be due to a smooth double fold of mucous membrane completely closing the lumen, except for a slit like aperture (imperceptible from above) a quarter of an inch long. He excised the diaphragm and sutured the edges of the mucous membrane remaining. The external wound was closed around an œsophagus tube. The patient recovered. Such cases were rare, only nine were recorded since the seventeenth century. The pathology was obscure. The general opinion was that they were congenital, but in this case the patient (aged forty-six) had only had symptoms for three years. Could it be the result of prolonged spasm of the muscularis mucosæ and circular fibres? Mr. Franks also showed a drawing of a case of development of external piles into fibroid tumors after an operation for internal piles.

Third Day, Friday, August 3d.

Ovariotomy.—Mr. Mayo Robson read a paper "On a Consecutive Series of Ovariotomies performed in the Surgical Clinic at a General Hospital." He brought forward the details of 216 consecutive cases, without any selection, as evidence that the claim of obstetricians to have the monopoly of such cases was unfounded. General surgeons were the best fitted to succeed; they were prepared to deal with any complication that might arise. He had done 850 abdominal sections with a mortality of twelve per cent., including cases of suppurative peritonitis and one desperate case. Most of his experience was in the wards of a general hospital.

Of the 216 cases, 14 died. Of these two were cases of malignant disease, in two there was intestinal obstruction, one was admitted with peritonitis, in one a fecal fistula existed and the patient died eight weeks after the operation, one had a suppurating cyst, one died of bronchitis, caused possibly by ether (on this point he held strong opinions), one from heart disease, one was due to hemorrhage from slipping of ligature on pedicle of a sessile tumor caused by vomiting; one death was traceable to a collection of sewage under the ward. The mortality was six and a half per cent.

The risk of sepsis was put forward by obstetric physicians as an argument against the performance of ovariotomy by surgeons who were frequently dealing with septic wounds, etc.; but he submitted that the obstetrician who might have been attending cases of puerperal fever, and whose fingers were frequently in contact with vaginal and other secretions was more likely to convey infection. He thought further that for these reasons obstetricians ought to leave ovariotomy to surgeons. As to diagnosis, the surgeon who was familiar with various non-gynecological diseases of the abdomen was more likely to be accurate than the specialist. He was strongly in favor of the maintenance of the distinction between the physician and the surgeon. He emphatically protested against the pretensions of the obstetricians. If there was to be any specialty let it be that of abdominal surgery. If a surgeon is fit to operate on the kidney and the intestinal tract, surely he was fit to operate on the female organs of generation.

Mr. Ward Cousins warmly congratulated Mr. Robson on his cases. He thought that he scarcely did himself justice, however, by including so many complicated cases.

Mr. Nelson Dobson said that in Bristol ovarian tumors were operated on as a rule in the general wards, with results as good as those in special wards elsewhere. He had seen a case in which ovariotomy was undertaken by an obstetric physician, which proved to be one of tumor of the kidney; the mistake was entirely pardonable, but it involved the performance of an operation quite outside the operator's experience, and one he would not have undertaken had the condition been diagnosed.

Mr. Robson, in reply, said that he could fairly have separated his cases as Mr. Cousins has suggested, but he wished to give a table that could not possibly be cavilled at. If so arranged, his mortality would be only 1½ per cent. Uncomplicated cases were very rare in his experience, there were nearly always adhesions or other complications, such as twisted pedicle, which always gave rise to peritonitis. He used a temporary ligature before beginning to remove the cyst, when it was possible—thus lessening the bleeding in dividing adhesions. He could not agree with one speaker, who claimed that gynecology was all surgery and should be the surgeon's province. Many cases were medical, such as those of slight disease of the uterine appendages, which were best treated by medical means, such as rest, and it was most unjustifiable to operate on all these, for, apart from any risk of operation, it was certainly a disadvantage to a woman to lose her ovaries.

The President traced the origin of the pretensions of obstetricians from the days no operations were done on the abdominal cavity, and the treatment of ovarian tumor was medical. He protested against women's hospitals, officered by men in general practice, who had had no surgical training since their student days, and were not fit to suddenly plunge into capital operations any more than he (Mr. Banks) was to turn a fœtus in utero. He adverted to the recent inquiry at a women's hospital in London, which had involved the resignation of the staff.

Papers were also read by Mr. J. Hutchinson, Jr., on "Injuries of the Elbow-joint," and by Mr. Mansell Moullin on "Treatment of Enlargement of the Prostate by Removal of the Testes."

The passing of a cordial vote of thanks to the President, moved by Mr. Ward Cousins, closed the proceedings.

SECTION OF MEDICINE.

First Day, Wednesday, August 1st.

Dr. F. T. Roberts, as President of this section, opened it with a few remarks, in which he urged the necessity of broad views in medicine, deprecated the tendency to specialize, hoped this section would always maintain its position, and expressed his pride in being asked to preside over it this year.

Functional Diseases of the Heart.—Dr. Douglas

Powell said that though the term functional had been objected to, he rather favored it as useful to designate disorders which were independent of recognizable change of structure. In the case of the heart, the commonest causes of such changes were nervous strain, shock, acute specific diseases, and such like. The result is some impairment of the cardiac mechanism, when the pulse is affected in its frequency, tension, or rhythm. He deprecated the term tachycardia. Many of the cases so termed resembled angina pectoris. Others were more like Graves's disease. Pulse tension was most important, and the recurrent pulse often found with high tension ought to be carefully distinguished. Abnormal slowness, the so called "bradycardia," is found as a sequel of typhoid and influenza, and sudden changes from frequency to infrequency, or a normal rate with alternation to either, have been found. Subjective symptoms are usually well marked, the patients being often troubled with a consciousness of such symptoms as irregularity or intermittence. As to treatment, the causes of mental or physical over-strain must be removed. Then iron and arsenic are useful, and sometimes trinitrine may be called for. Dr. Powell illustrated his paper by the following tabular statement:

I.

Cardiac Vascular Hyperæsthesia.	Source of Altered Innervation.	Exciting Cause.	Method.	Rhythm
1. Undue perception of heart's action, normal or altered.	Central hereditary neurosis.	Mental shock, nervous exhaustion.	Variable degree of arterial tension.	Variable varicose tension.
2. Oppressed heart's action with raised arterial resistance.	Central.	Mental strain, nicotine constipation, uric acid, uræmia.	Regular, with arhythmic interludes.	Do.
3. Angina pectoris. *a*, Vena; *b*, Vera.	Cardiac plexus.	Mental emotion peripheral excitement, visceral.	V. M. excit. causing secondary cardiac embarrassment.	Slow, laboured, quick.

II

Heart's Action Accelerated.	Source of Altered Innervation.	Exciting Cause.	Method.	Rhythm.
1. Paroxysmal palpitation under mental excitement.	Central.	Intense volition in emergencies.	*a*, Shock; *b*, reaction: *c*, cardiac pressure: *d*, visceral relaxation.	Regular.
2. Paroxysmal palpitation from indirect vagus excitement.	Central.	Vagus inhibition.		Irregular.
3. Paroxysmal palpitation from direct vagus excitement.	Visceral irritation, strain, pericarditis, endocarditis, nerve strain, hot bath, mental shock.	Anæmia.		Irregular.
4. V. M. relaxation.				Variable.
5. Sustained hurry of heart.				Regular.

Dr. P. M. Chapman could not agree that all causes of functional derangements of the heart are of nervous origin, as irritability of muscle undoubtedly has a disturbing influence, and also fatty degeneration. Slowing of the pulse may be due to irritation of the vagus, and the best remedy is faradization of the vagus. Graves's disease is often looked upon as incurable, but he does not think so, as he has met with instances of complete cure. The manometer is indispensable to accurate diagnosis.

Dr. James A. Lindsay was of opinion that the symptoms of organic and functional heart derangements are often identical, but after excitement are more intense in the former than in the latter. The condition of the cavity walls affords conclusive evidence.

Dr. Ernest Sansom objected to the term "functional," and instanced amaurosis, which he defined as a disease in which the patient saw nothing and the doctor saw nothing. Similarly, in so called functional derangements of the heart, the patient often felt a great deal and the doctor could find nothing wrong. Acute pain might be present and yet the heart show no sign of disease or even trouble. "Fatty degeneration" of the heart was a huge bugbear; but people do not die of it suddenly; in his opinion it was more frequently associated with pernicious progressive anæmia than anything else.

Dr. G. A. Gibson had met with cases of cardiac affection where the pain was localized in the hands or the wrists, or in the forearms, and believed these pains to be due to some profound change in the heart itself, often proceeding from dilatation, and this was frequently referred to as proceeding from nervous disturbances.

Dr. Shingleton Smith said there was no test for cardiac neuritis, and functional could not be separated from organic disturbances; they were thoroughly mixed in such diseases as goitre, anæmia, and perhaps in phthisis. However, the difficulty of diagnosis should not be allowed to cause hesitation on the part of the medical man. He found nitrite of amyl act admirably in modifying the symptoms in cases of functional derangement.

Dr. Watson Williams found cactus grandiflorus a specific in these cases; and observed that even in health the arterial tension was subject to variations.

Dr. Harry Campbell agreed generally with Dr. Powell, but believes functional cardiac derangements to be the outcome of nervous disturbance, the result, as often as not, of heredity. Heart attacks often simulated epilepsy.

Dr. Mandford believed that many cases of functional derangement were due to vascular tension, and the effects of mental emotion were often identical with those due to fatty degeneration. In such cases mental, as contrasted with bodily, rest was of immense importance, and gave instances. Believed that even moderate doses of alcohol had the most mischievous effects.

Dr. Tyson said the slow heart of advanced age was due to organic lesions, and instanced the case of an old gentleman who always had what was supposed to be an epileptic fit when the pulse fell to 22. Attacks of "slow heart" were apt to come on in the night in elderly people who had partaken freely of supper, and were due to pressure by a loaded organ and the recumbent position. He advised food to be taken in the early rather than a latter part of the evening, a recommendation that was received with much applause.

Dr. James Barr said that the cardiac irregularities were evidenced by variations in the pulse, and that the right side was stronger than the left. He had seen the right auricle contract for four hours after the rest of the heart had ceased to beat. It was the stimulation of the blood that excited the action of the heart, and as the right side was the first to receive the vital fluid it was necessarily the stronger of the two; correspondingly, it was the first to suffer from overwok.

Dr. Rattray related his experience with the one word paraldehyde, which satisfied both the patient and the doctor.

Dr. F. T. Roberts, in summing up, said that he believed in purely functional derangements of the heart, and they caused much suffering when there was nothing wrong organically; he had frequently experienced it in persons, also in students coming up for examination. Tobacco was a fertile source of functional cardiac disturbance, and so was alcohol. Many doctors were quite satisfied when they detected a bruit, but he did not believe that an apical murmur signified much. He believed also that application of lanolin to the apical cardiac region would be vastly more beneficial than drugs in such cases.

Dr. Powell replied, and alluded to the incompressible pulse, which he did not deny; he thought that cardiac pain was an erroneous expression, as the heart itself felt no pain. He expressed his great satisfaction that the discussion on the functional diseases of the heart, which he had had the honor to open, had been characterized by so much interest on the part of those who had participated in it.

SECOND DAY, THURSDAY, AUGUST 2D.

Pyrexia and its Treatment.—DR. HALE WHITE opened the discussion, giving an able résumé of all that is at present known of pyrexia and the various means resorted to to combat it.

DR. DOUGLAS POWELL had seen in influenza a subnormal temperature quickly followed by a relapse, and this because the fall was due to nervous influences. Pyrexia, he thought, was as normal a feature of disease as the ordinary temperature of the body was of health, and he had thought he had seen harm result from lowering it below the standard of the disease.

DR. GARRETT-ANDERSON considered that temperature was comparatively unimportant, and instanced the case of relapsing fever. The temperature of children runs up very easily; also in the case of women, where there is more nervous susceptibility than in the case of men. The temperature of a child might run up to 101° F. and above it, without portending anything serious; the human body was not rigidly bound down to a temperature of 98.4° F. Then there was the high temperature of anæmia. Had known good results follow the raising of the head of the bed, and from the use of the Swiss bath.

DR. OSLER, of Baltimore, mentioned the high temperature of chorea, which was due to the increased muscular action; the more violent the muscular contractions, the higher the temperature, which he had known rise to 106° and 107°. Cases that present a low temperature at first may often rise to an abnormal height. Systematic cold bathing in typhoid fever was as much on account of the toxæmia that existed as on account of the pyrexia; was surprised this plan of treating pyrexia had not found greater favor than it had in the English-speaking communities of the world. The hydro therapeutic system of combating disease had certainly decreased the mortality. Did not believe that the use of the cold bath diminished the tendency to relapse.

DR. S. SMITH thought it was strange that after twenty-five years of trial it should still be necessary to discuss the question of the cold bath in the treatment of pyrexia; but the introduction into practice of various antipyretic medicaments has done away with its necessity, though there were cases in which nothing else would serve. He thought the bath might be dispensed with where the fever could be kept under by the use of antipyretics. He had never know any harm to result from administering a moderate dose of antipyrin every hour, and if this could be done the patient should not be subjected to the inconvenience and shock of being plunged into a cold bath; but where drugs failed the bath was necessary.

DR. M. SKERRITT rather liked the bath, and preferred quinine to any other of the antipyretic class of drugs, but in large doses, say from thirty to forty grains for an adult. The tendency to relapse was less frequent after the use of quinine than after the administration of drugs the action of which was more rapid. As long as there was breath in the body it was not too late to administer the cold bath; he instanced the case of a man who was actually moribund and recovered from typhus fever after being placed in a bath of cold water. Had also found it useful in cases of rheumatic fever.

DR. POPE queried whether a high temperature was not an advantage to the subject of a bacterial invasion, otherwise why should it have been perpetuated? The production of heat was due to increase of the heart's action, and antipyretics act by reducing that action. Found the injection of cold water into the rectum of great benefit.

DR. TYSON did not consider moving a patient, even when excessive pyrexia was present, to be injurious; far more harm was likely to result if the temperature had fallen below the normal. The high temperature so often met with in children readily disappeared after the administration of an aperient. He deprecated the practice of permitting young children to paddle in the sea, and believed it often was the cause of their temperature rising to an alarming height.

SIR T. GRAINGER STEWART thought no medical practitioner could be adverse to the cold bath; much depression followed the use of drugs. What was the best temperature for the antipyretic bath? 65° to 70° F. he found distressed patients, and would not advocate it except in severe cases; cold or tepid sponging was to be preferred, or the rapid changing of ice-cloths placed on the abdomen. The ice-pack, too, was of use. When he had recourse to the bath he used it warm, and gradually cooled it by the addition of cold water until the desired effect was produced; it was thus a less shock to the system than plunging the body at once into cold water. In rheumatism he had not found it so useful as in fever, but in pneumonia he had seen good results follow its use. He thought it very likely that climatic influences had a great deal to do with those varying results.

DR. OSLER thought the bath of primary importance, it had been carried out successfully at Montreal and Brisbane and all intermediate points. It was disagreeable to the patient and the doctor, and if a better plan could be devised he would abandon it, but as he saved many lives by its use he would continue to have recourse to it if it were to cause as much more inconvenience and trouble than it did; his only object was to save life.

DR. HERBERT SNOW was surprised that no one should have mentioned a well known antipyretic formerly much in vogue, namely, calomel; it acted, he thought, in a twofold manner, aperiently and antiseptically, by its conversion into bichloride of mercury.

DR. W. G. KEMP applied heat in the form of hot bottles to the feet when depression followed the administration of a cold bath. The lecturer had spoken of daily baths. He advocated one every four hours. The danger of moving the patient was readily obviated by attention. He thought doctors lost a great deal by not using aconite more freely, and recommended that the most prominent symptom should be first attacked, it was the disease. When antipyretics failed to produce their effect there was something beyond pyrexia in the background.

DR. HEATH favored antipyrin, had a case of pneumonia with a temperature of 106.1° in a lad of thirteen years, gave forty grains of antipyrin in ten-grain doses every hour, and saved the boy, his own son. Had found much advantage from the administration of creosote in the pyrexia and night sweats of phthisis. The sucking of ice was useful and agreeable to the patient, but cold baths were not applicable in private practice. He believed that the man who ordered them would soon find himself without any patients. He believed that the type of all diseases was much lower to day than a few years ago.

DR. GARRETT-ANDERSON said that the relation of idiosyncracy to pyrexia was too often overlooked.

DR. MAHOMED had no faith in antipyrin, he believed it killed a relative of his; has faith in quinine and ice-pack.

DR. BENTLY practised for fifteen years in the tropics, and gave quinine in malarial fever in combination with sulphate of magnesia. Alone, he found it had no effect. He found ice and packing of great use in cholera, even when there was collapse. In cases of influenza he used antipyrin and salycin combined.

DR. ROBERTS, in summing up, thought pyrexia was often due to unsuspected nerve lesions, and that removal could be effected with advantage in most cases except those of typhoid fever. He believed the possession of a clinical thermometer was not an unmixed blessing—to the doctor, yes; to the patient and the patient's friends, no.

DR. HALE WHITE, in replying, said he would gladly take away every clinical thermometer from the patients and their friends, who were often needlessly alarmed by its readings; ten minutes was long enough to keep a patient in the bath; a lowering of the temperature was not necessarily a sign of improvement.

THIRD DAY, FRIDAY, AUGUST 3D.

THE Section met earlier and for a shorter time this day and not so many were in attendance, and of these some were anxious to get away by an early train, and others to attend the concluding general meeting where the address in Public Medicine was to be given.

Ataxia.—DR. ORMEROD opened the discussion on this subject. He remarked that swaying about of the body when the eyes were closed was an indication of the existence of this disease; curious to say, a blind ataxic was affected in the same way when the eyes were shut. Ataxia was a symptom of disease in various parts of the body, but especially of cerebellar lesions, and less so of the cerebral hemispheres, the staggering was due to paralysis of the muscles of the back and legs. Disease of the corpora quadrigemina gave rise to a rolling gait. Disease of the spinal cord was not limited to any set of transverse fibres, but was most common where disease of the posterior part of column existed; it was a late symptom of locomotor ataxy. Motor weakness may exist in conjunction with ataxia. Toxic influences, expecially alcoholic, set up ataxia, also follow rheumatism and gout. Ataxia runs in families and is ranked with tabes, but he thought wrongly. Hereditary ataxia is of the cerebellar type, begins in the legs and works up. Friedreich's disease is hereditary affection of spinal cord.

DR. ROBERTS said he did not know much about ataxia, except, perhaps, as a subject for examination.

DR. ANDRIEZEN, of India, said forms of ataxia were due to alcoholism and to insanity, with a rapid breaking down of the brain tissue; also to tabes which involved the nerve cells in posterior tract.

DR. WALDO thought it was a symptom of brain, spinal cord, and peripheral nerve lesions, as well as of functional disturbances, as in hysteria. Walking backward was the surest test for ataxia.

DR. GORDON thought Dr. Ormerod's classification was pathological, and that a good clinical one was still a desideratum. The muscles were less paralyzed than not acting in unison, not backing each other up properly. In chorea the attempt at voluntary movement provoked involuntary movements of other muscles. Some thought it was a functional disease, but there was always hyperæmia, which had been said only to exist in cases that went on to a fatal termination.

DR. DAWSON WILLIAMS said that ataxia might follow any of the acute diseases, even malaria. This association of ataxia with acute diseases lent support to the syphilitic theory of tabes.

Hereditary Ataxia.—DR. MITCHELL CLARKE presented a patient, twenty-one years of age, suffering from Friedreich's disease. The following was the family history: Father's father died at eighty-three years of age, he was healthy; cause of death being old age. Father's mother died aged seventy-six, of apoplexy. Father's one brother committed suicide. Father's one sister died of heart disease. Mother's father living, aged seventy-two, healthy. Mother's mother died of heart disease. Mother's one brother healthy. Mother's two sisters died of diabetes within a few months of each other. Patient has one brother, aged seventeen, affected in same way; one sister, aged fourteen, strong and well. Three other children were still born, but no further evidence of syphilis in parents could be obtained. Patient himself has never had any bad illness. No other case in family; no cousins affected with nervous disease. From the age of eight till thirteen he was continually frightened by his parents' quarrelling. In both brothers symptoms are similar. The first symptoms noticed were the difficulty in standing and walking, especially in the dark, the peculiar gait and inco-ordination of movements. Onset about five years ago; probably early symptoms not noticed; in brother first came on about the age of twelve. Course slowly progressive, especially as to muscular power, but remissions occur.

A second case was that of a pale, pasty-faced man thirty-five years of age, fairly well nourished. He had lost the greater part of his hair. He never had any severe illness; has had gonorrhœa, but not syphilis. He never had fits, or any loss of consciousness. He is said, when aged five years, to have looked "silly"—that is, he could not stand still, rocked to and fro when standing, and kept his mouth open; he had frequent falls, and appeared to throw himself about when walking. He worked as an errand-boy till the age of twenty, when he had to leave off on account of falling frequently and dropping the things he carried. Since then he had been unable to work in consequence of growing clumsiness and weakness, the latter gradually increasing so much that he has become unable to stand without support.

The father of the patient, a butcher, suffered from heart disease and dropsy, and died in an asylum, apparently of melancholia. His parents died of old age, his father living to be ninety-six; one of his sisters committed suicide; family healthy. The mother is still living. Her father's father died at the age of ninety-nine, and her mother at the age of one hundred and one. Her father lost all his hair before he was thirty years old, and died of diabetes; her mother died at the climacteric period. There were two other sons and another daughter, all of whom survive. They had fourteen children: 1, Georgina, aged thirty-seven, healthy; 2, Albert, aged thirty-five (one of the patients); 3, George (drowned); 4, Isaac (died of croup); 5, a son, aged twenty five (examined and found healthy); 6, William, and 7, Mary Ann (both died at the age of five months, of "weakness"); 8, Lizzie, aged twenty one (examined and found healthy); 9, a daughter (died at the age of one month, overlaid); 10, Caroline, aged eighteen (one of the patients); 11, Isaac (died at the age of three years, of croup); 12, John, aged fourteen (examined and found healthy); 13, Isaac, aged eleven (one of the patients); 14, a child prematurely born at seven months (died in three days). The father was a heavy drinker; no evidence of syphilis could be obtained. The mother is a strong, healthy woman, and does hard work. Has never suffered from fits, from any nervous affection, or any severe illness. She was carefully examined as to state of reflexes, etc., and found to be normal in every respect.

Tabes Dorsalis.—DR. CLARKE then presented a third patient with locomotor ataxia.

Symptoms in 1892.—Chas. O——, aged fifty-three; weight, 12 stone 21 pounds; has had syphilis. Illness began two years ago with lightning pains in legs, difficulty in walking, numbness and loss of power in hands, girdle-pain, and giddiness increased in the dark.

March 2, 1889.—Ataxy, both of legs and arms, by far most marked in the latter; there is considerable weakness of leg muscles, with uncertain and high-stepping gait; movements of hands show great ataxy; he can only button his coat with difficulty and most clumsily; knee jerk present on the left side, just obtained on the right side. Right pupil does not react to light, left reacts only over one-third part of circumference on temporal side (no other sign of iritis). Paralysis of right external rectus; optic disks pale; both fields of vision irregularly contracted. Static ataxia and Romberg's symptom well marked. The metatarsal joint of right great toe is affected with a tabic arthropathy. Pains five years; difficulty in micturition two years. His state in February was as follows: No loss of sensation, gait extremely ataxic, inability to turn round and to stand with eyes shut and feet together; could not walk without a stick; myosis and inequality of pupils; Argyll-Robertson phenomena; loss of sexual power, knee-jerks absent, gastric and laryngeal crises; rectal pains, and lightning pains in legs of great severity nearly every day.

DR. ORMEROD, in reply, said he was glad those who had taken part in the discussion had in the main agreed with him.

DR. ROBERTS said that brought the meetings of the Section to a close. He thanked all for their good behavior, and said further that what he had looked forward to with dread had proved a pleasure.

New Instruments.

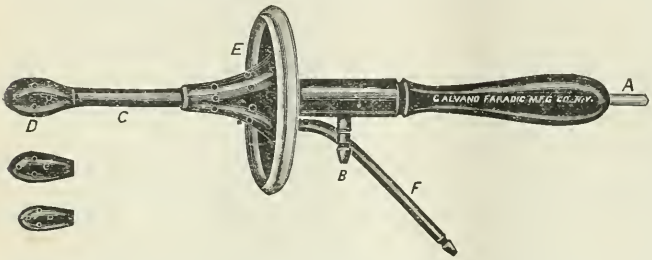
A NEW ELECTRODE FOR HYDRO ELECTRIC APPLICATIONS OF THE CONSTANT CURRENT.

By MARGARET A. CLEAVES, M.D.,

NEW YORK,

INSTRUCTOR IN ELECTRO-THERAPEUTICS, NEW YORK POST GRADUATE MEDICAL SCHOOL AND HOSPITAL.

In the treatment of pelvic exudates, ovaritis, vaginitis, simple and specific, pruritus vulvæ, and eczema of the vulva, I have often felt the need of applying the constant current in such a manner that every part of the diseased tissue, of whatever nature, would be influenced by it. This is impossible with any electrode with which I am familiar. All of the electrodes for the application of the constant current in these conditions, whether metal or carbon balls wrapped with absorbent cotton, or clay and covered with gauze, I have found objectionable. In the first place, these electrodes can never be used but for one application without being re-made, otherwise there is danger of sepsis. Second, because of the very great danger, even in careful hands, of producing an eschar, a danger greatly intensified in the hands of the non-expert. Third, because of the impossibility of bringing every part of the diseased tissue under the influence of the current, or of utilizing the cataphoric property of the current in order to diffuse into the tissues such drugs as would be indicated, especially in diseases of the vulva and in vaginitis, simple and gonorrhœal. Some time since I adopted the plan of bringing masses of pelvic exudates under the influence of the negative pole by the use of the *Boudet de Paris* method. This method was originally intended to be used for constipation and intestinal obstruction. The bowel is distended, to the toleration of the patient, with salt water, which serves as the electrolyte, and to the electrode is attached the negative pole, the indifferent electrode (an Apostoli pad) being placed over the abdomen of the patient. It has been possible, in this way, to bring the exudative matter in the pelvis well under the influence of the constant current, and this without the slightest danger of producing a caustic action or untoward disturbance of any sort. Rectal applications, however, are open to serious objection, unless absolutely necessary. In casting about in my mind for a better method, the idea occurred to me of a vaginal electrode, constructed in such a way as to enable me to apply the constant current in the form of a douche, either negative or positive, and at the same time to carry out any indication for cataphoric medication, or the diffusion of medicated solutions into the diseased tissues.



The external part of the electrode, shown in the cut, is of hard rubber, the handle of which is filled in with a brass rod from the point of attaching the rheophore at *A*, up to the attachment of the hose of the fountain-syringe at *B*. From *B* to the end of the tube *C*, where the perforated cap, *D*, screws on, it is lined with a tube of carbon.

Brass, aluminum, and tin were all tried, but with the former only the negative pole could be used, with aluminum positive currents and diffusion of certain drugs was possible, but with even mild negative currents this metal was attacked. Block tin was too readily oxidized to make it advisable, and the expense of platinum and gold precluded their use; therefore, carbon was selected, and it bids fair to answer every purpose. The electrode must, of necessity, be straight, and cannot be curved as it could with a metal tube; this, however, seems to me of but little moment. The shield, *E*, is movable, and has two rows of perforations through which the surplus water drains into the tube, *F*. To this drainage-tube is affixed a few feet of rubber hose, of less diameter than that on the fountain syringe through which the water or the medicated solution gains egress into the vagina, in order to retard the drainage and keep the vagina distended during the time of administration of the current. This drainage hose is dropped into a jar at the foot of the operating-table, the syringe-hose is attached at *B*, the rheophore tip at *A*, and the vagina allowed to become well distended with the water or medicated solution, before the current is turned on. By firm and even pressure of the shield over the ostium vaginæ, with the labia folded out, so as to occasion no discomfort to the patient, it is possible to administer any quantity of the douche, one to three or more quarts, without getting a drop upon the patient's clothing.

I have arranged to have a cushion of soft rubber placed over the edge, as is done in ether inhalers, as will be seen in the cut. The suction action thus produced will render it possible at any time that full distention of the vagina is obtained, to maintain the same, by shutting off the drainage-tube by means of a clamp. The surplus water, however, that remains with continuous drainage is enough to penetrate every fold and rugæ of the vaginal mucous membrane, as I have demonstrated by cutting off the inflow and taking note of the amount remaining as it drained away.

The instrument is made with three different sizes of perforated caps, the smallest and largest with perforations at the side for vaginal use, while the medium sized cap not only has the perforations at the side, but at the end as well, and is to be used for rectal applications. To convert the instrument into a rectal electrode, the shield should be withdrawn. It will readily be seen that there is no point of contact of the conducting material of the electrode with the mucous membrane in either rectal or vaginal applications. The salt water or the medicated solution, whatever its nature, is the electrolyte. As I have intimated, this method of rectal application originated with M. Boudet, of Paris.

I have thus far used this douche-electrode in cases of pelvic exudates, chronic ovaritis, salpingitis, chronic vaginitis, and in chronic eczema of the vulva. In a case of chronic vaginitis and eczema of the vulva of twenty years' standing, with the most intolerable itching, for which the patient had resorted to various means for relief, and obtained none, I have found this electrode of the greatest value. In this case the entire mucous membrane of the inner aspect of the labia was thickened, leathery, and fissured. At the ostium urethræ and vaginæ the color was an intense crimson. The same condition extended into the vagina. There was extreme sensitiveness upon digital examination, and the patient was worn and harassed by the continued irritation from which she had not been free in all these years, despite the heroic measures that had been used to insure recovery. After one application of the negative galvanic current in the form of a douche, there was marked relief from the constant irritation and a tendency to heal on the part of the fissures. After four applications had been given, extending over a period of two weeks, the mucous membrane was found to be as sound and whole as that of a

child, and the congestion at the mouth of the vagina and urethra had entirely disappeared, the mucous membrane having returned to its normal color and condition. There was complete cessation of the itching which had made the patient's life wellnigh intolerable, and a most marked improvement manifest in her general appearance.

In making the application, the tendency is for the electrolyzed water to flow out against the shield, and in that way to come in contact with every part of the mucous membrane of the vulva. Patients find this method of applying the current exceedingly tolerable, and in the conditions for which I have used it thus far there has been an invariable expression of relief following its use.

It is my purpose, in having the electrode constructed of an unoxidizable medium, to use it not only for the application of the constant current, but also for the purposes of cataphoric medication. In gonorrhœal vaginitis—a condition which is recognized as extremely difficult to treat—it will be possible by this method to bring not only the os and cervix uteri, but every interstice of the vagina as well, under the influence of the medicated solution and thus combat the specific condition. The fact that the gonococcus penetrates the submucous structures, makes it very desirable that we should be able to apply our remedies in such a manner as to insure their destruction. By cataphoric medication this is possible, as the medicament not only comes in contact with the mucous membrane, but is caused to penetrate more or less deeply into its structure according to the strength of the current and the length of the application.

By means of anodal diffusion, a solution of sulphate of copper of requisite strength could be used to advantage in gonorrhœal cases. In the later stages of gonorrhœa, in conditions of pelvic congestion, uterine catarrh, and in some leucorrhœas, hydrastine thus diffused would be of much greater efficacy than in its ordinary administration by the mouth, or by means of vaginal injections. Bichloride of mercury in solution could also be used according to the indications and in strength of from one to one thousand.

That drugs thus used enter the local and ultimately the general circulation, no longer admits of doubt. This diffusion takes place, as a rule, from the positive to the negative pole, but in some instances from the negative to the positive.

In the treatment of syphilis, Gartner[1] and Ehrmann obtained not only the specific action of bichloride of mercury upon the disease, but ascertained its presence in the urine as well after from fifteen to twenty minutes' treatment with the galvanic bath, containing from four to six grammes of the drug. The positive pole was used and a current strength of 100 milliampères. These experiments have been corroborated by Kroneld in Professor Lang's clinic in Vienna.

In the treatment of gouty joints with bromide of lithium cataphoresis, lithium has also been found in the urine.

By means of the rectal electrode, if the conducting medium is of an unoxidizable material, cataphoric medication may be utilized to advantage in the treatment of chronic intestinal diseases, such as enteritis, simple, pseudo-membranous, or follicular; in intestinal catarrh, in fermentative and putrefactive conditions, and in chronic thickening of the mucous membrane of the intestines.

Once one is familiar with the properties of the electric current and the technique of the operation, the therapeutic applications suggest themselves in great abundance.

In all instances we are enabled to avail ourselves, not only of the electric diffusion of the drugs, but the physiological action of the current as well.

68 Madison Avenue, May 25, 1894.

Dr. John Williams, the accoucheur of the Duchess of York, is a Welshman who was formerly a general practitioner in Swansea.

[1] Lewandoski: Electro-diagnostik und Therapeutie. Wien und Leipzig, 1892.

A TYPHOID FEVER BED-BATH APPARATUS.

By RUSSELL BELLAMY, M.D.,

HOUSE PHYSICIAN, SECOND MEDICAL DIVISION BELLEVUE HOSPITAL, NEW YORK.

During the summer and autumn of 1893 many cases of typhoid fever were admitted to the wards of Bellevue Hospital, and in the different divisions many methods of treatment were employed.

Undoubtedly the method that yielded the best results was that of Brand; but, unfortunately, it cannot be extensively used in private practice on account of the great expense, often five nurses being required, two for night and two for day work, the fifth assisting at intervals. In hospitals this treatment can be used to much better advantage; but as now practised, and under the most favorable conditions, it has many drawbacks.

Having superintended and assisted in giving nearly twelve hundred baths I had an opportunity to note that the system must be changed in order to lower the mortality, lessen the expense, and cause the patient less mental agitation.

The method of giving a bath in Europe, and as used in this city by Peabody at the New York Hospital, and carried out extensively by W. Gilman Thompson at the Presbyterian Hospital, is used in the second medical division, under the supervision of visiting physician H. P. Loomis, and assistant visiting physician C. S. Quimby.

Present Method.—The patient, after being stripped and covered by a thin sheet, is lowered by three, and sometimes four, nurses into a bath tub and vigorously rubbed for fifteen or twenty minutes until the desired reduction in temperature is secured. He is then returned to bed, usually with considerable difficulty. If he is strong, the muscles are stiffened and the weight raised with ease. If the power of resistance is slight, as is usually found to be the case by the twelfth day of the disease, considerable difficulty is experienced in lifting him to the bed and sometimes a serious traumatism has occurred. At times the patients complain of pain over the region of the body where he is handled; again they complain of experiencing a tired feeling, and think the suddenness of being lowered into the water, or roughly raised, too great a shock and a rather heroic measure.

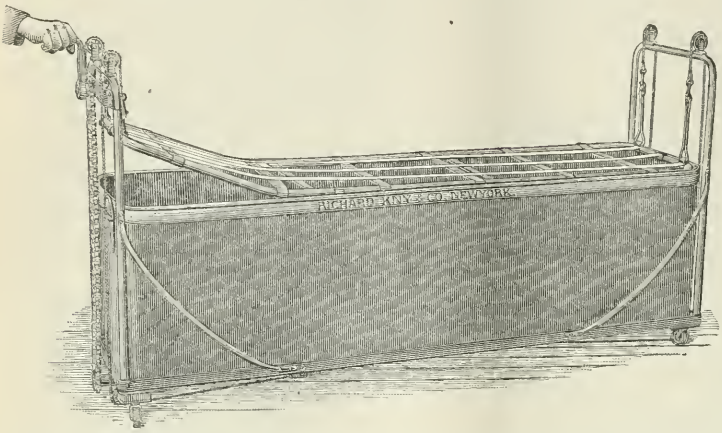
The close relationship between the visceral and parietal peritoneum to the abdominal muscles is to be considered, especially during the period of the disease when hemorrhage is most likely to occur, since at this time even a mild traumatism to these muscles could do much harm. I am inclined to believe that many hemorrhages and severe attacks of peritonitis will be avoided if the bath can be given without the least jar or exertion on the part of the patient.

After going over the literature of typhoid fever and consulting many of New York's most prominent physicians, I found that some different mechanism for giving baths is desirable.

The apparatus that Richard Kny & Co. of New York City, have so thoroughly constructed for me, consists of a galvanized iron bath-tub—one of any desired material may be substituted — 6 feet 4 inches long, 22 inches deep, and 20 inches wide. The supporting frame of this tub is on rubber wheels, and it is provided with a siphon exhaust-pipe, so that every drop of water can be removed in a few minutes. Supporting a comfortable steel mattress within the tub are four stout copper chains, passing over pulleys at either corner of the frame, and over a similar set under the tub. These chains are connected with an endless screw by cogs and a bicycle stop chain. The mechanism is controlled by a crank, so that the mattress can be raised or lowered by reversing the wheel. The apparatus is so arranged that the mattress can be raised several inches above the top of the tub, or lowered to the bottom. On one side a piece of galvanized iron, 2 feet long by 6 inches wide, is attached by hinges, and is used to bridge over the space between the tub and bed.

Method of Using.—The patient, naked, and covered

by a linen sheet, is placed upon a heavy rubber blanket, which is perforated near the centre; the bath tub is brought to the bedside, and the nurse, standing on the outer side of the tub and gently drawing the sheet, brings first the patient's head, then buttocks, and lastly feet, up on the steel mattress. A comfortable rubber pillow is placed under the head. The crank is reversed, the patient lowered into the water suddenly or by degrees, the bath given, the mattress raised to the level of the bed, and the water having escaped through the holes in the rubber blanket, the patient is transferred to the bed in the same manner that he was moved to the bath.



The steel mattress can be detached and the whole apparatus thoroughly disinfected. It is painted with white enamel and is not clumsy. In devising this typhoid bath-tub I had only hospital cases in view, and the manufacturer has so constructed this tub that it is adapted to the average hospital bed. Its height evidently can be modified as desired.

When we consider that a bath can be given by one attendant, and the patient experience no disturbance, either mental or physical, we feel that we have done something toward rendering the famous Brand system more generally available.

Large Increase of Lunacy in Great Britain.—The forty-eighth report of the British commissioners in lunacy, just issued as a Parliamentary paper, says there were in the kingdom, on January 1st, 92,067 lunatics, idiots, and persons of unsound mind, according to the various returns to the commissioners. This number is 2,245 in excess of the corresponding returns from the previous year, and shows the largest increase in the number of lunatics yet recorded. The report says: "This large increase calls the more for some special consideration, because it follows an increase of 1,974 in the preceding year, that being far above the average for the ten years 1882 to 1892, which was only 1,300. The increase seems to have been fairly general throughout England and Wales, but the predominant feature of the figures is the great increase shown in the county of London, its pauper lunatics numbering on January 1st, 800 more than they did a year previously. It is perhaps right in this connection to point out that from the administrative county of Middlesex, which is fast becoming metropolitan, there is shown from last year an excessive increase of 103, against an average for the previous ten years of 42. From one of the tables attached to the report it appears this state of affairs, though alarming, is not quite so serious when considered in conjunction with the increase of population, the ratio being one insane person in 326, as against one in 331 for the previous year."

Correspondence.

TRANSFER OF THE INSANE TO HOSPITALS.

To the Editor of the Medical Record.

Sir: In a recent number of the Medical Record the transfer of the insane from their homes to hospitals is discussed at some length, and the writer of the article criticises severely the system under which such transfers are made. His remarks are apparently intended to be general in their application so as to cover the entire country, but incidentally, and I have no doubt inadvertently, unwarranted strictures are made upon an important feature of the State Care Law, now in operation in the State of New York. The errors can be easily shown, and I trust the facts may receive the publicity they merit in the columns of the Medical Record.

That cruelties and inhuman practices were common a decade ago is only too true. Indeed the writer might easily have found much more horrible instances of brutality than those cited. The unfortunate victims of insanity were often treated like felons, and it was almost a daily occurrence that they were brought to hospitals in the strait-jacket, in manacles, or bound with ropes, and usually in a sad state of bodily uncleanliness. This terrible state of affairs was one of the strongest arguments used to secure the passage of chapter 126 of the Laws of 1890, familiarly known as the State Care Law. Section six of this chapter specifically made it the duty of the President of the State Commission in Lunacy "to prescribe regulations governing the transfer of public insane patients from their homes or from poor-houses to State hospitals by superintendents of the poor, and concerning the clothing of State patients." The President of the Commission accordingly, on September 10, 1890, issued the following order:

"1. That all county superintendents of the poor, or town, county, or city authorities, before sending a patient to any State hospital see that said patient is in a state of bodily cleanliness and provided with the following clothing, to wit:

"(*a*) One full suit of under-clothing. (*b*) One full suit of outer-clothing, including head-wear, boots, or shoes.

"Between the months of November and April, both inclusive, there shall be provided, in addition to the foregoing, a suitable overcoat for the men patients and a suitable shawl or cloak for the women patients; also gloves or mittens. Considering the great danger always present of the introduction of contagious or infectious diseases into institutions where large numbers of people are congregated, and to avoid so far as possible the introduction of such diseases by means of wearing apparel, the clothing above provided for must, in all cases, be new.

"2. In travelling by rail patients must not be compelled to ride in smoking or baggage cars, except in the case of men patients who may be so violent, profane, or obscene as to render their presence in ordinary passenger coaches offensive. If any portion of the route is necessary to be traversed by a team a covered conveyance should, unless impossible, be provided. The shortest practicable route should be selected; the hour of departure should be timed, so far as possible, so as to avoid

the necessity of stopping over night on the journey, and so as not to reach the hospital at any unseasonable hour. Whenever practicable, a notice in advance, by writing or telegraph, should be sent to the medical superintendent of the hospital of the coming of the patient. In cases of violent patients a sufficient number of attendants should be provided to control their actions without resorting to the use of mechanical restraints, such as straps, ropes, chains, handcuffs, etc.; quieting medicines should not be given to such patients except upon the prescription of a physician. If it becomes necessary to remain over night or for a number of hours at a station on the route, patients are not to be taken to jail, police station, or lock-up. Food in proper quantity and quality, and at intervals not exceeding five hours, should be provided for patients, but no alcoholic beverages must be given unless upon prescription of a physician. Opportunity must be afforded for attention to the calls of nature, and the rules of decency must be observed. In case of the employment of extra attendants in conveying violent patients, care must be taken that they are of adult age and of good moral character. The provisions of the statutes which require that a woman attendant shall accompany women patients when taken to State hospitals must be strictly complied with.

"3. Any violation of the requirements of this order shall be promptly reported, so far as known to him, by the Medical Superintendent of the hospital to the State Commission in Lunacy.

"4. This order shall take effect on the first day of October, 1890.

"By the President of the Commission,

"T. E. McGARR, *Secretary*."

The effect was immediate. The lot of the insane patient was greatly improved. Mechanical restraint, which had long been discarded in the hospitals, was thrown aside by county officials almost entirely, and the whole scheme of caring for the insane in New York State became more elevated in character in the letter as well as in the spirit.

The foregoing comprehensive order of the Commission continued in force for a period of three years, during which radical reforms were accomplished; but the best results were attained only when the State Care Act became wholly operative, October 1, 1893. On that date, under its provisions, the State Commission in Lunacy issued the following order: "The authorities of State hospitals for the insane shall send trained attendants to transfer insane patients from their homes or from poor-houses to State hospitals, as provided by section six of chapter 126 of the Laws of 1890. . . . Whenever possible, a few days' notice should be given to the hospital authorities of the transfer of the patient, and when the case is urgent the notice should be sent by telegraph or telephone."

It will, therefore, be observed that for nearly a year past the hospital authorities have regularly sent trained attendants to the homes of patients as soon as notice has been received that they have been examined and certified as insane, and have assumed entire charge of the cases at once. These attendants have been instructed to see that the orders of the Commission are fully complied with before starting for the hospital, and to provide for the patient every possible care and attention during the transfer, thus securing for him the protection of the hospital at the earliest possible moment. At the Binghamton State Hospital this plan has proved in the highest degree satisfactory. The attendants employed for this special work are competent, intelligent, and kind. They are thoroughly trained in the care of the insane, and invariably make their charges as comfortable as possible during transportation. When women patients are to be brought to the hospital, women attendants are always sent to bring them. Cared for in this way they usually come calmly and are much less disturbed or exhausted when they arrive at the hospital than was often the case under the old system. Besides attending to the patient's physical requirements our attendants succeed in obtaining good histories of the cases, and thus materially aid the physicians in deciding upon the proper course of treatment. All this is accomplished at a cost to the State rarely exceeding actual travelling expenses.

Surely the reform accomplished in the method of transporting the insane from their homes to hospitals in the State of New York, during a period of less than half a decade, merits stronger commendation than is to be found in the "undercurrent" which the editorial states is now running in the direction of reform.

CHARLES W. WAGNER,
Superintendent Binghamton State Hospital.
BINGHAMTON, N. Y., July 30, 1894.

THE INTRODUCTION OF LEPROSY INTO JAPAN.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Dr. Beaven Rake, of Trinidad Leper Asylum, recently called my attention to the following passage, to be found in "Hirsch's Geographical and Historical Pathology" (translated from the second German edition by Charles Creighton, M.D.; London, the New Sydenham Society, 1885): "In Japan, according to the unanimous accounts of the chroniclers, it (leprosy) must have appeared as early as the thirteenth century B.C. (between 1234 and 1250)."

The authority for this statement is given in a footnote thus: "Schmid, New York MEDICAL RECORD, July, 1869, p. 194."

On referring to the MEDICAL RECORD of 1869, I find the following passage in "Notes from Japan," by H. Ernest Schmid, M.D., White Plains, N. Y.: "All records on that malady date its first appearance in Japan only as far back as from about 1234 to 1250."

As Schmid qualifies his statement with the adverb only, he evidently means A.D. and not B.C. Hirsch, therefore, seems to me to lean on a broken reed when he alleges the authority of Schmid.

There is no written evidence in Japan that leprosy was known there as early as the thirteenth century before Christ. But there is evidence that it existed before 1234 and 1250 A.D. Under no circumstances could Schmid mean B.C., there being absolutely no proof for such a date. It is believed that leprosy existed in Japan as early as the beginning of the eighth century, or even somewhat earlier. It may have existed there as early as it did in China, that is 1122 B.C.–314 B.C. But evidence to this fact there is none. There are written evidences in Chinese works of ancient treatments of leprosy which date back, one, 2,000 years, and the other falls between 618–690 A.D. Dr. Goto, now in Molokai, is authority for the statement that the disease was known in Japan in 718 A.D. According to Dr. Baelz, the Etas, the negro element of the Japanese Islands, are descendants of leper colonies; they are to day the leprous element of the outcast population. The origin of this negroid element is mythical; it does not fall in historical times; neither, as a consequence, does the origin of leprosy which this element represents. In this case the disease is supposed, naturally, by leprologists, to have come from Africa. In the Mongolian element of the Japanese it is natural to admit that it came from China, which would carry it back, at all events, to the epoch of the introduction of Buddhism from China and Corea, that is, to the sixth century. There can be no other reasonable theory as to the exact time when leprosy appeared in Japan.

Dr. Goto, of Honolulu, writes me, under date of July 8, 1894, that since February 8, 1885, to 1894, twenty-one thousand eight hundred and eighty-one Japanese men, and five thousand one hundred and ninety-one Japanese women, emigrated from Japan to the Hawaiian Islands. In this large number, five men developed the disease after their arrival, and four were suspected. This is quite the reverse of what happens at the introduction of Chinese emigrants. The Chinese seem to take the disease quite

naturally, and, indeed, it is they who are believed to have brought it originally into the Sandwich Islands. This also would be sufficient to warrant the suspicion that the disease in Japan came from the Chinese, as well as it did, if really it did, come through them to the Sandwich Islands.

Goto remarks that the Japanese made no change in their diet, and that fish remained prominent therein. We may remark in passing, that if fish diet was a factor in the transmission of contagion, there would have been more of an outbreak in such a large number of Japanese in nine years (one person a year).

Dr. Basadre, of Lima, Peru, informs me that the only cases he has observed in Peru were always Chinese, never Peruvians.

Dr. Muñiz says that leprosy is very rare in Peru, and that only a few (Chinese) are affected by it. In 1893 there were only two deaths from leprosy, and at the time when Dr. Muñiz wrote to me, there was only one case at the Hospital del Refugio, and it was a Chinaman.

Hence we may assume confidently that to Japan, the Sandwich Islands, and to South America, leprosy came from China.

ALBERT S. ASHMEAD, M.D.

45 MACDOUGAL STREET, NEW YORK.

CYANIDE OR FERROCYANIDE OF POTASSIUM?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: One word about the cyanide of potassium poisoning case mentioned in the MEDICAL RECORD of July 7th. It is evident that some drug was taken, but it could not have been cyanide of potassium. The patient says: "I took a solid piece, perfectly smooth on all sides;" this fact alone is conclusive, for cyanide of potassium does not occur in that form, but ferrocyanide of potassium does, hence it must have been the latter drug. It appears that the doctor did not see the drug himself, which renders the case doubtful. Cyanide of potassium is one of the most formidable poisons known to chemists. It has destroyed life in a quarter of an hour, and tetanic spasms occur in a few seconds or minutes, and run through their course with great rapidity.

J. H. TRENT, M.D.

BROOKLYN, N. Y.

DOSIMETRIC MEDICATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Being one who is a believer in the dosimetric method of administering medicines, I have read Dr. Mann's article on "A New Cardiac Tonic Dosimetric Granule" with much interest. With the general purport of that article I am thoroughly in accord; but I regard it as unfortunate that Dr. Mann uses the term dosimetric, as his granule is not in reality a dosimetric granule at all. On the contrary, its composition contravenes three of the fundamental principles of dosimetry:

1. Dosimetric granules contain one medicinal principle only in each granule.

2. They contain a fixed, usually minute, amount of the drug. That is to say, for instance, the morphine granule always contains one milligramme, the strychnine granule one-half milligramme, and so on.

3. They are made according to the metric system.

It is in the first two of these principles that the strength of dosimetry lies. The physician adjusts his treatment to each particular case, giving so many of one kind of granule and so many of another, and can vary the proportion from time to time, whereas if relying on a number of ready-made prescriptions like Dr. Mann's, he will inevitably in many cases give, not what would be the best prescription for the patient, but the nearest he happens to have at hand, in his case or office. To my mind nothing tends so much at the present time to hinder the progress of scientific therapeutics as the slovenly habit, which is so wide spread, of using ready-made formulæ, mainly in the form of tablet triturates. Dosimetry aims among other things at the abolition of this habit.

Perhaps it is hardly necessary to add that Dr. Mann's prescription can be represented approximately by the dosimetric granules already in use, thus:

Morphine hydrochlorate....	5 granules (5 milligrammes).
Strychnine sulphate.....	1 granule (½ milligramme).
Atropine.....	1 granule (¼ milligramme).
Caffeine.....	1 granule (1 milligramme).

G. M. WASSE, M.D., M.R.C.S. ENG.

BALDWINSVILLE, N. Y.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 18, 1894.

	Cases.	Deaths.
Tuberculosis	111	98
Typhoid fever	26	10
Scarlet fever	28	6
Cerebro-spinal meningitis	0	6
Measles	31	1
Diphtheria	122	27
Small-pox	3	0

A Pasteur Institute has been opened in Tunis.

The Monument to Surgeon Parke, the medical officer of the Emin Pacha relief expedition, which is to be erected in Dublin, will represent him in the dress worn in Africa during the expedition, standing with crossed arms leaning on a gun, resting the left foot upon a medicine chest.

Nasal Reflexes.—For the diagnosis of "nasal reflex neurosis" Zarniko requires, 1, that every other possible explanation should be eliminated; 2, that there should be present some local reflex symptoms (for example, fits of sneezing), such as are known by experience to be frequently associated with remote nasal reflex neuroses; 3, that the inspection of the nose should reveal such changes as frequently set up reflex disturbances; 4, that artificial irritation (probing) of some area in the nose should excite the reflex symptoms; and 5, that anæsthetization of that area should put an end to them. In some cases he considers the last two points sufficient ground for the diagnosis.—*British Medical Journal.*

The Value of Our Mistakes.—It is always a pleasant thing to be right, but it is generally a much more useful thing to be wrong. If you are right, all that you do, as a rule, is to confirm your previous opinion, your previous habits of reasoning, and your previous self esteem. But if you are wrong you generally gain in knowledge and gain perception of the way in which your method of diagnosis needs improvement, and the influence on self-esteem is not likely to do you harm. At least that is my own experience, and I think I have observed it confirmed in others. But the result is dependent on deliberate effort. There is a strong temptation to smooth down error, and it is very easy not to gain from it its precious lesson. It is more easy to fancy that there is some accidental cause for the mistake than frankly to perceive that it is a fault. But if you make a deliberate effort to realize and to face in your own mind the mistake you have made, to discern its cause, and to employ this perception as far as you can to remove the cause and prevent a like mistake in the future—if you do this, almost every error becomes one of the precious experiences of your practical life.—DR. W. R. GOWERS.

A Society for the Suppression of Handshaking, as leading to an exchange of microbes, has been established in Baku, Russia.

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Original Articles.

SEWER GAS A CAUSE OF THROAT DISEASE; OR THE EFFECT OF BAD DRAINAGE ON THE THROAT.[1]

BY BEVERLEY ROBINSON, M.D.,

CLINICAL PROFESSOR OF MEDICINE AT THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

"A GREAT deal of vague assertion has been made with regard to the effects of sewer gas, or as it is better called, sewer air, upon the human system. While some look upon it as always poisonous, and often virulent, others consider it usually harmless, though unpleasant. The good health of workmen engaged constantly upon sewers is cited in favor of this latter view."[2]

The opinion just quoted manifestly shows that there is much of expressed opinion on this subject found in medical literature which is based upon facts capable of widely different interpretation. In a tenement house, let one or more cases of throat disease be suddenly present, and the attending physician immediately suspects the condition of the plumbing. A sanitary inspector from the Health Board is called. Untrapped, filthy sinks, malodorous water-closets, a damp cellar containing accumulations of organic substances, animal or vegetable, in a state of decomposition and giving off effluvia, will usually be discovered. Not infrequently, in addition to these sources of disease, the peppermint or smoke test properly applied will make known a leaky joint, or a perforation of the soil-pipe, which allows sewer air to permeate the entire building. Which of these conditions —or do all combined—occasions the throat affections which have shown a sudden outbreak, or been present more or less continuously? How difficult to decide in a satisfactory manner!

Whenever, besides the preceding conditions, we find overcrowding, poor ventilation, bad food, lack of personal cleanliness, over-fatigue, exposure, anxieties, poverty, excesses—how can we properly estimate the *rôle* of each determining or causative factor of the throat disease in its exact proportion? Evidently in many instances the task is very difficult, not to say insuperable. And yet there are unquestionably numerous examples on record in which the impure air from sewers and cesspools has seemingly been the means of propagating diphtheria and other throat diseases. Instances, indeed, are not wanting which go to show that the poisonous decomposition of organic matter in sewers is in some way connected with the dissemination of these diseases.

Dr. Chaumont publishes two cases in support of this opinion. One is that in which a number of children were attacked with diphtheria, apparently caused by a leakage of sewage in a part of the house immediately under the nurseries of the children. The other case was that in which by a defect in the sewer-ventilating pipe passing up close to the cupboard in a nursery, there was an escape of sewer-air into the room occupied by a number of children, with the effect of sickening the whole of them.

Dr. Wilson[3] remarks that "in country districts isolated outbreaks of diphtheria traceable to cesspool effluvia are not at all uncommon. In these cases it is generally found that there is a water-closet in the house which itself is badly ventilated, and that the closet drainage discharges into a cesspool which is completely covered up and only cleaned out at rare intervals. The consequence is that any gases generated in the cesspool have no outlet except through the water closet and into the house, and hence result attacks of diphtheria, ulcerated sore throat, and other badly defined ailments."

"From an inquiry instituted by the State Board of Health of Massachusetts in 1875, respecting the predisposing causes of diphtheria, its prevalence, etc., it would appear that this disease has been most severe in the rural districts where there are no sewers and where the drainage is generally very bad. In some of these places the level of the ground-water is high, and on this account when there is high water many cellars are damp or contain standing water. This is probably one of the worst sanitary conditions in connection with diphtheria. It helps perpetuate it by furnishing a breeding place for its disease germs if they become implanted, and it also favors catarrhs and sore throats, which render persons having them more susceptible to that disease. Besides the conditions referred to, the soil is often polluted from house slops and excavated privy-pits."[4]

"The belief that the propagation of diphtheria is greatly influenced by contaminated air from sewers, privies, soils, etc., or, in other words, by filth infection, seems to be gradually gaining ground; but at present evidence is not sufficient to justify a decided opinion."[2]

"Perhaps these faulty conditions produce a sore throat of a benign character which affords a soil suitable for inoculation by the diphtheria germ when present in the air."[3]

According to other writers, defective sewerage, dampness, and lack of cleanliness, account undoubtedly for most cases of diphtheria developed in private houses.[4] Indeed in some of these instances the presence of the Loeffler bacillus, the true cause of diphtheria, has been shown in the gases arising from sinks.[5] We owe this demonstration to the researches of Dr. Fischer, who has shown also that these sinks are not properly flushed, and that for this reason they often become the breeding-place for these and other bacteria. In commenting upon Dr. Fischer's researches Koehler states that the portion of the waste pipe of washstands and sinks between the outer opening and the first trap is particularly objectionable for this reason. This portion of the pipe receives varying amounts of organic matter and water, which is exposed to and warmed by the air of the adjoining room. These are, of course, suitable conditions to produce an excellent culture ground for many kinds of micro organisms. The traps of a house may, therefore, be in perfect order, and yet we may not be safe from infectious sore throats. The condition just referred to is usual, and yet frequently cooks and others escape sore throats, at least for a time. When they are otherwise well, the chances are that they will escape; when they are ailing for one reason or another, they are more likely to contract a sore throat from habitual contact with the source of contagion mentioned.

Many people, both adults and children, before con-

[1] Read before the Congress of American Physicians and Surgeons, Washington, May 30, 1894.
[2] MEDICAL RECORD, August, 1888, p. 186
[3] Handbook of Hygiene, 1877, p. 71

[1] Report of State Board of Health of New York, 1893, pp. 294, 295.
[2] Buck: Hygiene and Public Health, vol. i., p. 589.
[3] Osler: Practice of Medicine, p. 99.
[4] MEDICAL RECORD, September 30, 1893, p. 422.
[5] Ibid., January 28, 1893.

tracting diphtheria or other affections of the throat have been weak or sickly. The vitality of their body-cells is already lowered, and they are thus rendered more susceptible to the action of virulent germs. Many agencies conspire to bring about this condition; such are, notably, wet and cold, hunger, physical or mental depression, worry, and severe shock. In many instances diphtheria, follicular tonsillitis, and other forms of sore throat have been known to follow exposure to some of these causes, and independently, as far as can be known, of any infection from dirty pipes.

It is an admitted fact that the throat swarms with bacteria at all times, and possibly the Loeffler bacillus is among them occasionally,[1] but they are incapable of doing much harm to the individual carrying them if he be in good health. Through the depressing influences referred to they are capable of multiplying and increasing in virulence, and finally causing infectious sore throats. The sore throat may be taken indeed by the individual who first receives or develops the bacillus, or he may infect other persons without himself having given evidence of sore throat or other disease.

From what precedes, we should see clearly how important it is to keep up an excellent condition of general health in order to avoid contracting throat diseases. It is also evident that proper disinfecting washes or gargles for the mouth and throat are very important to keep it in a condition where infective bacteria will not develop, or, if present, will not take on virulent properties. These precautionary measures, which are or may be useful at all times, and particularly for children, are likewise specially desirable for the delicate ones, and in times of epidemic or exposure in any way to the sources or causes of infectious sore throats.

The aggravating effects upon the condition of the throat of effluvia from sewers and drains is, then, most probable. While the distinct connection between the two conditions cannot always be determined, yet in very many cases it is clearly demonstrated. Moreover, reasoning by analogy it should be true, inasmuch as sewage emanations are known to aggravate the severity of all the exanthemata, erysipelas, hospital gangrene, and puerperal fever (Rigby); and it would seem that all diseases are more or less affected by these effluvia.[2]

That many cases of tonsillitis are immediately caused by the air of sewers and fecal emanations scarcely admits of reasonable doubt. The evidence in this direction is very convincing, and I am persuaded that I have seen these affections dependent to a great extent upon the polluted air of sewers, cesspools, and of the soil. We can properly explain the throat affection, it seems to me, in the same way we do the development of typhoid fever. "The morbific agent conveyed through the medium of the air finds its way into the houses from cesspools improperly located, or from drain pipes imperfectly ventilated or badly trapped, or from impure soil beneath and surrounding the dwellings. With the doctrine that the disease is not in the micro-organism itself, but in its products, we may have floating matter which is not living and yet which is infective; so the gases of certain kinds of decomposition may be sources of contagion without our deciding whether or not they have been produced through the agency of low forms of life.[3]

"In some cases sore throats have been confined to a particular part of the house, especially exposed to the effluvia from badly trapped drains; and as the water supply was unexceptional, and other sources of disease could not be found, there could be no doubt as to the source of the infection."

[1] That Loeffler bacilli are present at times in considerable number in the mucous secretions of the tonsils and pharynx of children apparently in good health is now clearly established. This important and suggestive fact we owe to the researches of Drs. Chappell and Park. Vide MEDICAL RECORD, April 14, 1894.

[2] Buck: Hygiene and Public Health, vol. i, p. 585; quoted from Parkes.

[3] Report of the Board of Health of the State of New Jersey, 1893, p. 76.

Even though we might be inclined to give a different interpretation to some facts of an analogous kind, yet what we can say is that in many instances in which the bad sewerage has been partially, or more or less thoroughly remedied, the throat affections have notably lessened, or disappeared almost entirely for a while. In this direction we have the unbiassed and careful testimony of many judicious observers. Thus Dr. Billington, of New York, writes in regard to the etiology of diphtheria: "The relation of cause to effect has been demonstrated by the fact that in some buildings which had come to be looked upon by me as diphtheria nests, there has been no recurrence of the disease for quite a number of years since the evils referred to, viz., foul cellars, neglected cesspools, bad plumbing, untrapped sinks, no air-shafts, were removed through the efforts of the Board of Health. It is probable, moreover, that it is, in some degree at least, a result of the removal of these foci of the disease that the mortality from diphtheria in the ward of which Dr. Billington was an out-door visiting physician, has become very much less.[1] The experience of Billington is corroborated by that of others. Thus "the persistent attacks of enteric fever (and also diphtheria?) which formerly occurred at Eastney Barracks in England were due to sewer-air being forced back by the tide, no traps or ventilating openings being supplied; since this was remedied and ventilation carried out, no case of fever has occurred." [2]

On the other hand, I have known diphtheria and follicular tonsillitis to occur, and not infrequently, in houses where the closest investigation could show no defect whatever in the sewerage of the house, where the cellar was clean and dry, where ventilation was excellent, and where, indeed, no discoverable and satisfactory cause of the kind referred to could account for the development of these diseases. At first thought this fact would appear to support those observers who claim that insanitary conditions, due especially to defective plumbing and drainage, have very little to do in occasioning an outbreak of throat disease. This statement I can only admit in so far as to say that imperfect sewerage is only one of the efficient causes of diphtheria and other throat diseases, and that numerous other causes of these affections may and do exist. These other causes, already referred to, are especially active, no doubt, in times of epidemics. In cases of diphtheria and other throat diseases due to endemic causes, it is quite clear at times that the bad sewerage of the house acts in one of two ways: First, in causing a condition of the throat upon which the specific bacillus of diphtheria, or other micro organism, can graft itself more readily; second, in developing, perpetuating, or perhaps in originating, the specific bacillus or other microbe which is frequently present in the air of a certain house or locality.

Again, in estimating the influence of drainage in producing throat disease in certain houses of the rich, and even though no visible defect can always be discovered, it must be remembered that in view of the complicated and multiform appliances of modern plumbing, they "have seemed to multiply rather than to obviate the insidious dangers from noxious miasms." [3]

Be it observed, also, that American houses, as a rule, have no other way of changing the air than by opening the windows. Water-closets oftentimes are found with no connection with the outer air, located in the middle of the house, and what ventilation there is, is into the rooms of the house.[4]

According to Jacobi [5] cases of diphtheria which are traceable to sewers are very frequent. Yet he shows how in the same house one may see cases of dysentery, ty-

[1] Diphtheria and Croup, p. 22. New York: William Wood & Co. 1889.

[2] Stevenson & Murphy: Hygiene and Public Health, vol. i, p. 11. London, 1892.

[3] Billington, p. 23.

[4] Parke's Hygiene, with Am. Supplement. Wood & Co., 1884, p. 526 (Appendix).

[5] Treatise on Diphtheria, p. 34. Wm. Wood & Co. New York, 1880.

phoid fever, and diphtheritic sore throats, all due apparently to a common poison.

This should be admitted, says Jacobi, unless we assign a triple character to the poison, or banishing the belief in specific influences, simply attribute the causation of these diseases to the lowered tone of the system, and after this manner affording to morbid influences an opportunity to exercise their power.

The following case, in my personal experience, has in this connection some interest. I was called to see a case of diphtheria in the practice of Dr. Smith Ely, New York. In regard to this case Dr. Ely in a letter dated March 12, 1894, reports as follows: "In a persistent search for a cause of diphtheria in the C—— children, some of the casing enclosing the drain-pipe in the water closet being removed, a piece of the pipe below the trap was found to be broken out, so that, of course, the sewer gas mingled freely with the air of the house. This state of things might have existed for a long time. There was another slight case of diphtheria in one of the other children at the same time. In September, 1891, the same child who had diphtheria so badly had typhoid fever. There were other cases in the neighborhood, however."

As is so frequent in similar cases, the possibilities of causation in infectious diseases are rarely single, or always definitely separated from one another.

In certain families, diphtheria and follicular tonsillitis show a tendency to spread even though the sanitary conditions are of the best.[1] The connection, moreover, between diphtheria and preceding throat affections is occasionally most marked. This is probably the most important link between various insanitary conditions and the diphtheria which sometimes breaks out amid them. In this sense defective house sanitation is often a cause of diphtheria by producing a morbid condition of the mucous membrane which favors the development of the specific bacillus, though in other instances there is reason to believe that the specific bacillus might be present in the sewers of a district, and thence gain access to a house.[2]

Moreover, now "many are entertaining the view that different microphytes may produce the same disease, or that the same microphyte is subject to modification in virulence and in its products, and that disease may be influenced by the quality, as well as by the quantity, of the invading irritant."[3]

Once the sewers have become infected they may perhaps continue to be so for an indefinite period. If, then, for any reason, the plumbing fixtures of a particular domicile are defective, it is readily appreciable how sewer-air laden with disease germs finds access to it.[4]

Observation and experience have further taught us that sewers, if not properly constructed and carefully attended to, are more detrimental to health than if there were none at all.[5]

On the other hand, it is certain that in many instances diphtheria does not require for its development any of the ordinarily considered anti hygienic conditions. So far as we can determine accurately, the growth of the infectious element of the disease is not invariably favored by bad air or imperfect ventilation. Witness the facts reported by Jenner,[6] who states that he has seen more cases of this disease in hospital than in private practice; and again, as showing how little the untoward course of diphtheria is thus influenced, we note that whilst half of Jenner's hospital cases died, more than half of his private cases died.

These opinions of Jenner are in a measure corroborated by the results of a careful comparison of a large number of cases of diphtheria, reported in Massachusetts (Jacobi). Among the conclusions of the official report we find that "The contamination of the atmosphere of the bed-chamber by the emanations from sewers requires further study."

In this connection Dr. Arthur Newsholme, Medical Officer of Health for Brighton, England, states that diphtheria had increased in England latterly, and more particularly in urban districts.

"In this particular it differed greatly from other diseases of zymotic type, which had been much mitigated in severity by sanitary improvements."[1]

If this fact be admitted, it is additional proof perhaps that diphtheria depends for its spread on contagion direct from infected materials. The presence of sewers favors its continued existence. Closely inhabited localities do the same thing also, by furnishing ready means for communication of the disease. Thus in most cities it has become endemic.[2]

Elsewhere[3] in speaking of tonsillitis, I have said: "It is perhaps a less familiar fact that exposure to a vitiated atmosphere will occasion the development of tonsillitis in children. Septic causes of tonsillitis are also often met with, and I am constantly advised of the fact that defective drainage may give rise to recurrent attacks of tonsillitis in children."

This statement seems to receive corroboration from Osler,[4] who writes, "Bad hygienic surroundings appear to have a direct etiological connection with the disease." In so many instances defective drainage has been found associated with outbreaks of follicular tonsillitis that sewer-gas is regarded as a common exciting cause. Bernabei has also found that in many cases of acute angina streptococci are discovered, and that these cases are epidemic and contagious.

Rendu and Bulloche are even of the opinion that all acute anginas are of bacterial origin, and similar opinions are held of late by many other observers.[5]

In many of these cases, according to Kingston Fox,[6] and Browne, the differential diagnosis from acute tonsillitis due to cold or other causes is made by the fact that the septic cases are bilateral in the beginning.

No doubt, as I have observed frequently, some children are rendered more susceptible to septic causes by the presence at the same time of a rheumatic habit or a strumous constitution. Nevertheless, whenever recurrent attacks of tonsillitis occur in a child, or among children in the same family, it becomes a duty to see to it that the basins, sinks, lavatories, drains, and pipes shall be examined as carefully as possible, to discover if there be any defect in the plumbing through which sewer gas may gain entrance to the house. It is important again to observe that frequently no doubt what is recognized as sewer-gas in our houses is the result of decomposition which takes place in the house-drains themselves, rather than the result of decomposition in the distant sewer forced into our houses through the connecting drain (Waring). It is doubtless a fact that in many instances the gases formed within the drain of a house are far more hurtful to health than the gases which circulate in the main sewers. This is frequently explained by the fact that pipes and drains of the house have become coated over with slimy deposits which in time are considerable, and because many of these soil pipes are never properly ventilated by a proper circulation of air.

A considerable degree of doubt exists in the minds of some practitioners about the evil effects of sewer-air on the throat. This arises probably from "the notorious fact that workers in sewers are remarkably free from disease, and particularly from affections of the throat." Indeed, in the numerous citations which I have referred to personally, I have found no case in which one of these men is said to have suffered from diphtheria or tonsillitis. In many of the cases of disease which have been reported,

[1] Jenner: Lectures on Fevers and Diphtheria. New York, 1893.
[2] British Medical Journal, February 24, 1894, p. 430.
[3] Report of Board of Health of State of New Jersey, 1893, p. 82.
[4] Vide Report of State Board of Health of New York, 1893, p. 516.
[5] Report of State Board of Health of New Jersey, 1893, p. 282.
[6] Jenner: Loc. cit.

[1] British Medical Journal, February 24, 1894, p. 430.
[2] Vide Report of State Board of Health of New York, 1893, p. 516.
[3] Cyclopædia of Diseases of Children, Keating, vol. ii., p. 332.
[4] Practice of Medicine p. 332.
[5] Burnett: System of Diseases of the Ear, Throat, and Nose, vol. ii., pp. 250, 251.
[6] Transactions of the Medical Society of London, vol. ix., p. 255.

the illness may have been only a coincidence,[1] and in no manner connected with their profession. It may also be said in regard to these cases of immunity that these men have become gradually acclimatized to their usual surroundings, and that the others who were unfavorably affected by the work in the sewers, had abandoned it and taken up employment of a different kind.

Whenever cases of diphtheria, follicular tonsillitis, or erythematous sore throat occur in a house where the plumbing is found to be defective, we should be careful not to ascribe these diseases necessarily to this cause. In what precedes it has been shown that throat diseases may, and often do, occur where the drainage is bad; they also occur where the sewerage is in perfect condition; they likewise appear where there is no sewerage at all to account for the outbreak. If the sanitary appliances are defective, we are naturally inclined to hold them responsible for the throat disease. And yet, as a fact, few of our city, or country houses, even of those owned by wealthy people, come up in their plumbing arrangements to the requirements of a careful sanitary engineer. Despite this fact, the throat condition of the majority of people remains tolerably good, and the percentage of those who suffer from diphtheria, or less severe disorders of the throat, is comparatively small. Again, there may be some cause of throat disease other than that of breathing sewer-air, which has been overlooked, and yet ultimately is proven to be the occasion of the outbreak. In illustration of this statement I would cite an outbreak of diphtheria in the village of Upchurch, England, which was finally attributed to the dust from the collections of refuse from London dustbins accumulated in the neighborhood, and when the utter absence of any other source of infection was affirmed.[2]

The chronic poisoning with sewer-air, especially in its relation with diseases of the throat, is, as we have seen, a subject to which considerable thought has been given, and yet the conclusions arrived at are uncertain. Still it would seem to be fairly well established by repeated observations that the breathing of sewer-air for any considerable length of time, and even though largely diluted, will occasion many of the throat affections. The clinical experience of numerous physicians, the evidence of sanitarians, all point strongly to this fact. It is also proven that evil effects of breathing sewer-gas on the throat depend not so much on the quantity as on the quality of the gas. If the sewer-air contain the specific germs of diphtheria, it may become the carrier of this disease. At another time, when the sewer-air contains no such specific germs, it will be the bearer only of follicular or erythematous tonsillitis.

It is probable that sewer-air may at times be inhaled quite a long period without developing any symptoms of throat disease. At a later period, when the sewer-air becomes laden with harmful germs, a throat affection of infectious type may occur with certainty. In children, when no specific disease germs are at work, the symptoms of chronic sewer-air poisoning are frequently those of catarrhal tonsillitis. In times of epidemics the catarrhal tonsillitis is apt to assume a severe or malignant type,[3] and a simple sore throat may, under the influence of sewer-air, assume a very serious and aggravated form. In children, particularly, the susceptibility to the influence of air polluted by sewage emanations appears to be greatest. They easily become languid, and may suffer from sore throat connected or not with diarrhœa or some other manifest disturbance of the digestive tract.[4]

People are more apt to suffer from the evil effects of sewer-gas during the night than during the day, when the body is undergoing active exercise, and when the rooms are better ventilated. This is the reason why we hear patients say so frequently that they have gone to bed perfectly well and have awakened during the night or in the early morning suffering from sore throat. It is quite possible that the ordinary putrefactive bacteria, when germinating in pent-up sewerage, may be the cause of the catarrhal sore throats produced by sewer-air.[1]

Finally, it must be obvious "that the effect oftentimes is practically the same whether the fermenting sewage is contained in sewers, or has soaked into the ground about the house. Both may pollute the air with the same gases and may produce like effects upon the throat. When furnace fires are used in the house, the gases from a sewer-soaked soil may be drawn into the rooms above, giving rise to all the injurious effects of sewer-air."[2] "Or the position of the air inlet of a furnace near a drain-opening or other source of contamination may allow foul air to pass into the heating chamber of the furnace and be distributed through the house," thus becoming the efficient cause of diphtheria, follicular tonsillitis, or other throat disease.

The following communication I am indebted for to the courtesy of Dr. A. Campbell White, House Physician at the Willard Parker Hospital, N. Y. Dr. White's report appears to me very interesting and instructive. Miss Graf, the nurse from St. Luke's Hospital, referred to by Dr. Campbell, was seen by me both during and subsequent to her attack of diphtheria.

"I believe the impression is or has been quite universal that the origin of epidemics or of individual cases of this disease could be traced to faulty plumbing or some other condition giving rise to escape of sewer-gas. That such a condition can be the primary cause of diphtheria we are now quite safe in denying.

"We are very positive in asserting that the Klebs-Loeffler bacillus is the organism at the foundation of every case of diphtheria, and we can be almost equally positive in saying that this germ cannot be found in sewer gas.

"If the drain-pipes are in a moist condition, as they almost invariably are, it is justifiable to believe that even though these pipes may be loaded with the bacilli of diphtheria, the gases escaping will not carry the infection necessary to produce this disease.

"We can take for an example, and I think it is a good one, the wards in our hospital. Here we have some fifty patients, every one of whom has the bacillus of Klebs and Loeffler in the throat or nasal passages. We can compare, for sake of argument, these throats to the sewer pipes, and the air these patients are constantly exhaling to the sewer-gases. Now the ward, of course, in spite of good ventilation, is constantly filled with the expired air of patients suffering, some of them, from the very worst forms of diphtheria, yet we have never succeeded in obtaining any Klebs Loeffler bacilli in the air examined, nor have any of the attendants, who live twelve hours out of twenty-four in these same wards, contracted the disease.

"We are very firmly convinced that to contract this disease direct contact is absolutely necessary. Therefore sewerage (containing the diphtheria bacillus) must come in direct contact with the patient by contaminating the water, or some other such manner, in order to be held responsible for an attack of diphtheria."

Nevertheless I do not hesitate in saying that constant exposure to sewer-gas is a very important element in determining the severity of an attack of diphtheria, and that in many cases it is the most important factor in bringing on a fatal result.

At the annual meeting of the Public Health Association, held in Baltimore in 1875, Dr. Noel, after citing many cases in his own practice to bear out his statement, said: "We do not say that this gas is the direct cause of diphtheria, croup, etc., in the sense of being the one and only efficient cause, but we do contend, and we defy criticism here, that in Baltimore City it has most assuredly been the one constant factor invariably present in the most malignant and well defined house epidem-

[1] Osler: Practice of Medicine, p. 261.
[2] The Journal of Laryngology, March, 1894, p. 124.
[3] Reference Hand-book of the Medical Sciences, vol. vi., p. 435.
[4] Bartley: Ibid, vol. vi., p. 436.

[1] Loc. cit., p. 436.
[2] Parkes: Hygiene, with American Supplement, p. 526 (Appendix), Wm Wood & Co., 1884.

ics." We can give an excellent example in our own recent experience. I refer to the case of Miss Graf from St. Luke's Hospital, and the other two nurses who attended the family in Pennsylvania, a family of seven or eight members, living in a house where the plumbing is exceptionally poor, and, as the nurses testify, where there is a constant odor of sewer-gas penetrating the entire place. Now every member of this family, ranging in ages from under five years to twenty-seven years, contracted the disease, and every one died after a comparatively short illness. This is a most frightful mortality. The three nurses who attended these cases also contracted the disease, but immediately came to our hospital for treatment. Not one of them died, and only one developed into anything like the malignant form assumed undoubtedly by the cases in Pennsylvania. We can hardly attribute this difference entirely to treatment, nor can we say they did not have the same exposure, but I think we are justified in believing that this marked difference in mortality was more than a little influenced by the fact that the former cases were treated in a sewer-poisoned atmosphere, while the more fortunate nurses were cared for in a clean, well-ventilated ward in our hospital, where there is no taint of sewer-gas.

Another important point to remember is that we are now finding many people in the very best of health walking around with the Klebs-Loeffler bacilli in their throats displaying no signs whatever of diphtheria. Some of these people later develop the disease, in others the Loeffler bacilli disappear without having caused any trouble or inconvenience. The former have been exposed to cold, have developed a catarrhal inflammation of the respiratory passages, or in some such way the throat, previously immune, is rendered susceptible to the bacillus. Now such a person, with the necessary bacilli in his throat, breathing in from day to day the atmosphere laden with sewer-gas, is almost certain to develop diphtheria, and we can readily see how easy it is to say (not knowing that the patient had previously the bacilli in his throat) that such a person contracted his diphtheria from the gas escaping from a defective sewer-pipe, while, on the contrary, if he had not already the bacilli in his throat, he might have gone on indefinitely breathing this vitiated air without even developing the disease.

We have ample reason to believe that sewer-gas attacks the weak spots of the patient. Dr. F. Gordon Morrill mentions this point in the *Boston Medical and Surgical Journal* of 1884. Among the diseases brought on by sewer-gas in this way he mentions, besides those affecting the throat, rheumatism, gout, asthma, pneumonia, and even neurasthenia.

The influence of sewer gas upon diseases of the throat can be summarized as follows: 1. Given a patient with a so-called weak throat, subject to frequent attacks of quinsy, etc., expose him to sewer-gas, he will probably develop amygdalitis. 2. Given a patient in good health, with a throat containing Klebs Loeffler bacilli, expose him for any time to sewer-gas, and he will probably develop diphtheria; or 3. Given a mild case of diphtheria, expose him to sewer-gas, and the disease will assume a more malignant type.

Therefore, although sewer-gas plays an important part in the etiology of some throat diseases, it can by no means be held responsible as the primary all-efficient cause.

The following letter is also of considerable interest. I saw the last boy who died, in consultation with Dr. Chandler, and agreed entirely with him in regard to the diagnosis:

"South Orange, May 26, 1894.

"Dear Doctor: The history you desire is in brief as follows: In April, 1888, Mr. C—— built and occupied a house on —— Avenue, Orange, N. J. In April, 1890, his oldest son was very sick with diphtheria, but recovered. No unusual amount of sickness affected his family for two years later in this house. He then moved to another town.

"A Mr. G—— occupied the same house after Mr. C—— vacated. He had a family of three children. All had been previously well. They soon sickened of various disorders of no especial name or magnitude. After living in the house about one year one child developed diphtheria, and after a week's sickness died.[1] About a month later, a third child was attacked with the same disease. By the advice of their physician they left the house on the third day of the child's sickness, but that child also died.

"The plumbing and draining of the house were found to be defective, the wash tray in the butler's pantry was without a trap. Mr. C——, who first lived in the house used the tray, but always kept the plug in the outlet and there was no overflow. Mr. G—— did not use the tray, and the plug was often out, and a 'bad odor' was noticed from the tray.

"An outlet pipe, to remove surface water which might collect in the cellar, ran directly to the cesspool and was also without a trap. Thus there were two vents from the cesspool directly into the house.

"These are, briefly, the facts without comment. They speak for themselves.

"Very truly yours,

"William J. Chandler."

THE PHONOGRAPH: ITS PHYSICS, PHYSIOLOGY, AND CLINICAL IMPORT.[2]

By J. MOUNT BLEYER, M.D.,

NEW YORK.

VISITING SURGEON TO THE NEW YORK THROAT, NOSE, AND CHEST HOSPITAL; LARYNGOLOGIST GERMAN WEST-SIDE CLINIC; MEMBER ROYAL ACADEMY, NAPLES, ITALY, ETC.

Before I enter upon a demonstration of the underlying principles and the action of the phonograph, let me occupy a moment of your time by recalling those special characteristics of the human voice, the distinguishing qualities of musical tones, etc., which it is necessary to keep before us in order to thoroughly understand the instrument I intend to dissect, both anatomically and physiologically before you.

You are all more or less familiar with the phonograph. Five years ago it was a closed book to us. To-day we presume to know it from preface to appendix. I fancy there are many here in this section who casually know me from the few years of work I have done in experimenting with the machine and the fragments that from time to time have gone forth to the profession from my pen and workshop. I can almost hear them say: "Here he is again; what can he have to tell us now?" My answer is simply to let you know the further stage of perfection to which I have been able to carry the recording and reproducing with integrity the sounds and tones which, aside from their general scientific importance, must soon become a valuable assistant to us in the positive recognition of disease.

All sound begins in those collisions and attractions among material things by which their parts are thrown into tremors. These are almost as various in quality as the properties of material substances. The sounds we hear are but indices to the vibrations of bodies from which they proceed, and the multitude of such terms as splash, roar, ring, thud, crack, whiz, squeak, crash, illustrate the marvellous diversity of characters which material vibrations may take. In the production of noise the thrills of matter are transient and irregular, but when prolonged and regular they give rise to musical sounds. Vibration depends upon elasticity, and bodies which are capable of the protracted and measured pulsations of music must, of course, be highly elastic. All bodies vibrate differently, and this depends upon the nature, form, and magnitude of the mass in motion. The vibrations of bells differ with their sizes and the metals and alloys which compose them; while wooden and me-

[1] Another child was stricken with a light attack of the same character before the first child died, but recovered.

[2] Read before the International Medical Congress, Rome, 1894.

tallic tubes, strained strings, and stretched membranes, illustrate the same thing.

Take a tuning-fork and set it into vibration by drawing a violoncello string across its prongs; the fork yields its own characteristic note, which will be loud or soft in harmony with the manner in which the fork has been set into vibration; so long as we use one fork only, it is obvious that the only vibration which can be produced in the sounds confines itself to a vibration of their intensity. If the extent of the vibrations be small, the sound resulting is feeble; its loudness increasing with the excursion of the prongs. What is true of the tuning-fork is true of any musical instrument, and hence the loudness of musical sounds depends upon the amplitude of the vibratory space of that which produces it. Now take two tuning forks, differing in the pitch, and let us presume that one is just an octave above the other. They may be excited in such a way that the notes emitted are of equal loudness, the only point in which they differ being in pitch.

We all know that the pitch of a fork depends upon its rate of vibration, which we can readily measure with suitable apparatus, and thus it is comparatively easy for us to accurately determine the pitch of a tuning-fork, and should we so test the two tuning-forks in question we would find that the notes of the one of increased pitch would vibrate twice as fast as the other. If the one, say, makes one hundred oscillations per second, the other, an octave higher, would make two hundred in the same interval of time, thus we may be assured that the pitch of any note depends upon its rate of vibration and nothing else.

So having accounted for two characteristics of a musical note, let me come to the third, which is of equal, if not greater, importance, and by no means so easy of explanation. I refer to what we generally term the "quality." The French have the more comprehensive term for it; they call it "timbre," while the Germans have the most exact defining word in the term "klang-farbe."

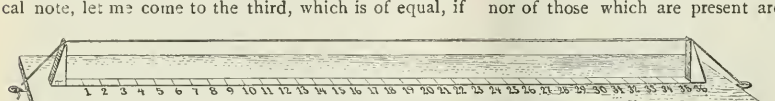


FIG. 1.—A stretched string showing a pendulum motion which makes only a given number of vibrations in a fixed time.

Klang-farbe is that which constitutes the difference between a violin or an organ and a piano forte, or between two human voices; indeed we may say between any sounds, musical or otherwise, which are of the same pitch and loudness, but readily distinguishable from each other.

To explain the physical cause of quality let us suppose we have a thin metallic wire stretched between two points over a sounding board (Fig. 1). When plucked at the centre the wire vibrates over its entire length, a loop being formed between the two points. The note emitted by the wire when vibrating in this manner is called the fundamental note. If we should dampen the wire at the centre by laying across it a feather or quill pen, and pluck it at a point midway between the centre and one end, both halves would vibrate in the same manner and independently of each other. That is to say, there will be two vibrating segments and a point of rest or node at the centre. But the rapidity of vibration of each segment will be twice as great as that of the wire when vibrating as a whole, and consequently the note emitted will be the octave of the fundamental.

When damped at a point one-third of the length from either extremity, and plucked half-way between that point and the nearer extremity, the wire will vibrate in three equal divisions, just as it vibrated before in two divisions; but now the rate of vibration will be three times as great as at first, and the note produced will be a twelfth above the fundamental. Similarly, by dampening and plucking it at suitable points, the wire may be made to vibrate in four parts, five parts, six parts, etc., the rate of vibration increasing to four, five, six, etc., times what it was at first. For example, let us assume that when the wire was swinging as a whole, and sounding its fundamental note, the number of oscillations performed in a second was 100. Then we see that, by taking suitable precautions, the wire can be made to break up into two, three, four, five, six, etc., vibrating segments, the rates of vibrations being respectively 200, 300, 400, 500, 600, etc., and the series of notes emitted being the octave above the fundamental, the fifth above the octave, the double octave, the third and fifth above the double octave, and so on. We now come to an important point, which is this—that, the wire being free, it is practically impossible to strike or pluck it in such a way as to make it vibrate according to one of the above systems alone. It will vibrate as a whole, wherever and however it is struck; but this mode has always associated with it or superposed upon it some of the other modes of vibration to which we have just referred. In other words, the fundamental note is never heard alone, but always in combination with a certain number of its overtones, as they are called. Each form of vibration called into existence sings as it were its own song, without heeding what is being done by its followers, and the consequence is that the sound which reaches the ears is not simple but highly composite in its character. The word "clang" has been suggested to denote such composite sound, the constituent simple sounds of which it is the aggregate being called its first, second, third, etc., partial tones. All the possible partial tones are not necessarily present in a clang, nor of those which are present are the intensities all the same. For instance, if the wire be struck at the centre, that point cannot be a note, but must be a point of maximum disturbance; hence all the even partial tones are excluded, and only the off ones, the first, third, fifth, and so on are heard.

That characteristic of a musical note or clang which is called its quality depends upon the number and relative intensities of the partial tones which go to form it. The tone of a tuning fork is approximately simple; so is that of a stopped wooden organ-pipe of large aperture blown by only a slight pressure of wind. Such tones sound sweet and mild, but they are tame and spiritless. In the clang of the violin, on the other hand, a large number of partial tones are represented; hence the vivacious and brilliant character of this instrument. The sounds of the human voice are produced by the vibrations of vocal bands, aided by the resonance of the mouth. The size and shape of the cavity of the mouth may be altered by opening and closing the jaws and by tightening and loosening the lips. We should expect that these movements would not be without effect on the resonance of the contained air, and such proves upon experiment to be the fact. Hence, when the vocal bands have originated a clang containing numerous well-developed partial tones, the mouth cavity, by successively throwing itself into different postures, can favor by its resonance first one overtone and then another, at one moment this group of partial tones, at another that. In this manner endless varieties of quality are rendered possible. Any one may prove it himself by making the experiments, that when singing on a given note he can only change from one vowel sound to another by altering the shape and size of his mouth cavity.

The Propagation of Sound.—Having thus briefly indicated the physical causes of the various differences in musical notes and the production of sounds by the organ of voice, I will now devote a few moments to consider how these sounds are propagated through the air and

reach the delicate diaphragm of the phonograph, while recording any kind of sounds.

Now, in order that all these multifarious and diversified tremblings of natural objects may be brought into relation with animate creatures, a common medium of communication is necessary. The air around us is such a medium. It possesses the marvellous power of taking up the numberless and ever-varying thrills of material objects and conveying them through space with all their peculiarities. The sensitiveness of the air (if I may so speak) to the faintest tremors in material objects, and its power of transmitting their individual qualities, are most wonderful. It drinks up the infinitesimal motions of things and diffuses them swiftly, simultaneously, and in countless myriads in all directions around.

That air is the medium of sound is proved by the fact that when vibrations occur in space void of air the silence is not broken. If a bell suspended by a string in a vacuum be struck, nothing is heard, although, if it is in contact with the jar, the vibrations are communicated to the outer air and sound produced. That air transmits the kind of motion that it receives is also proved by the fact that it will take up vibrations at one point and communicate them to a distant object that is capable of vibrating in the same way.

The velocity of impulses in the air which produces sound has been well established, and all kinds of shocks —the firing of a gun, notes of a musical instrument, or the voice, whether high or low, harsh or soft—all move at the same rate. The velocity is not affected by changes in atmospheric pressure or moisture, or by rain or snow, but it is affected by wind and by temperature.

The speed of sound is 1.090 feet per second at the freezing-point, and increases about one foot per second for each degree of ascent on the Fahrenheit scale. Sound moves in air with about the speed of a cannon-ball, and at a rate ten times greater than the swiftest motion of air in a hurricane. The sound produced in the open air tends to move in all directions with equal speed, but this tendency may be disturbed by various conditions. If the whole mass of air is moving in one direction, sound will travel faster with it than against it. In still air the sound of a musket-shot will be heard farthest in the direction of the impulse. Experiments have shown that a person speaking in the open air can be heard about equally well at a distance of 100 feet in front, 75 feet on each side, and 30 feet behind. When an obstacle checks a sound in one direction it can be heard farther in others, because, as a given amount of force produces a given amount of motion if the motion is arrested in some directions it is increased in others.

We have now seen that air is the common vehicle of sound, and that the sound impulses move in all directions at a high speed. But what is it that actually moves? The particles of air certainly not shot from the vibrating body to the ear, for then we should live in the midst of storms ten times more violent than tropical cyclones. The wonderful elastic properties of gases here come into play. The vibrations of bodies produce waves or pulses in the air. When a disturbance is produced at any point in an aërial at rest, sonorous undulations spread out from that point in all directions. These undulations are the effect of the rapid vibratory motion of the air particles. The analogy of water waves will help us to understand what is taking place under these circumstances. If a stone be dropped into the still surface of a pond, a series of concentric circular waves are produced, each wave consisting of a crest and a hollow. The waves travel from the centre of disturbance, while the drops of water which constitute them have an oscillatory motion in a vertical direction. That is to say, following any radical line, the water particles vibrate in a direction at right angles to that in which the wave is propagated. The distance between two successive crests or two successive hollows is called the length of the wave; the amplitude of vibration is the vertical distance through which an individual drop moves. In a similar manner sonorous undulations are propagated through air by the oscillatory motion of the air particles. But there is this important difference between the two cases, that in the latter the vibrating particles move in the same direction in which the sound is being propagated. Consequently such waves are not distinguished by alternate crests and hollows, but by alternate condensations and rarefactions of the air, the transmission of which constitutes the transmission of sound. The wave length is the distance between two consecutive condensations or rarefactions. It depends upon the pitch of the transmitted sound being shortened as the sound is more acute, while the extent of vibration of the air particles increases with the loudness. Such are the peculiarities of the vibratory motion in air corresponding to the pitch and loudness of the transmitted sound. But what is there in the character of the motion to account for the difference in quality? A little reflection will show that there is only one thing left to account for these, and that is the form of the vibration. Let us mentally isolate a particle of air, and follow its movements as the sound passes. If the disturbance is a simple one, produced, say, by the vibration of a tuning-fork, the motion of the air-particle will be simple also, that is, it will vibrate to and fro like the bob of a pendulum, coming to rest at each end of its excursion, and from these points increasing in velocity until it passes its neutral point. Such, however, is clearly not the only mode of vibration possible. If the disturbance be produced by a clang comprising a number of partial tones of various intensities, all excited simultaneously, it is obvious that the air-particle must vibrate in obedience to everyone of these tones. Its motion will be the resultant of all the motions due to the separate partial tones. We may imagine it starting from its position of rest to move forward, then stop short, and turn back for an instant, then on again until it reaches the end of its excursion. In returning it may perform the same series of to and fro motions in the opposite direction, or it may move in a totally different way. Nevertheless, however complex its motion may be—and as a rule it will be exceedingly complex—its periodic character will be maintained. All the tremors and perturbations in one wave will recur in all the others.

Could we see what takes place in a room when a tuning-fork is in vibration, giving out a "single note," we should behold all the particles of the air agitated in tremulous sympathy, and filling the space with swiftly expanding spheres of spectral beauty. Or were the effect produced by several instruments played, we should see forms in countless variety carving the air into ever-changing figures of geometrical harmony, and creating the perfect music of geometrical forms. Such a revelation is impossible from the swiftness of movement, which would baffle the eye; but it would be also impossible, because the complications of movement would confuse it. But where the optical sense fails the auditory sense succeeds. The membrane of the ear receives the torrent of motion and transmits it with all its harmonies. In an orchestra, where scores of instruments are playing through the whole compass of the scale, the air is cut into waves or pulses by every complexity of vibration—grave tones mingle with shrill, soft with harsh, fundamentals are merged in overtones, and the storm of impulses is shot with the speed of rifle bullets against the diaphragm of the phonograph as against the tympanum; and yet there is no confusion. In all their infinite diversity of qualities the waves are graven upon the little membranes.

In order to complete the physics in this paper, I cannot pass over it without paying some attention to visible sound.

The idea of getting a visual expression for musical vibrations occurred to Chladni, a physician of the last century. He fastened a plate of glass by its centre, and then, having scattered some sand over the surface, threw it into sonorous vibration by means of a violin bow

(Fig. 2). The plate when thus set in vibration, the sand was tossed away from certain parts of the surface and collected in other parts, forming regular geometrical figures. The plate, like a string, has one rate of vibrations which belongs to it; but again, like a string, by "dampening" it with a touch of the finger or fingers in different points along the edge the note changes, and with it the figure made by the sand. The lines on the plate where the sand settles are nodes, the lines of comparative rest. The violent agitation in the parts left bare can be shown by mixing a little lycopodium powder with the sand; this is excessively light, and is caught in the little whirlwinds of air generated about the vibrating segments.

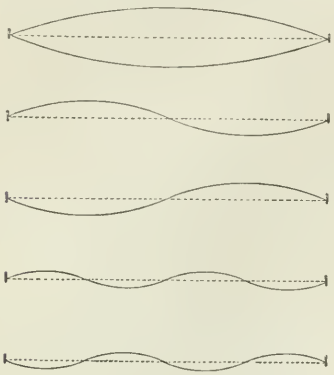


FIG. 2.—Showing the to-and-fro excursion of a plucked string.

A little instrument invented by Professor Sedley Taylor, and called the phoneidoscope, gives a most exquisite illustration of music made visible. He says that by this contrivance it is possible, by means of a soap film, to get different figures for different pitches, for different intensities, and for different qualities of tone. I did not find this instrument to answer in practice.

We are now upon the very threshold of Mrs. Hughes's voice figures of which I have spoken *in extenso* in a previous communication, but for the sake of completeness I will recapitulate some of the important points set forth therein. She has reached the path which brought her to them by the phoneidoscope. Her eidophone is constructed on the same principle as the phoneidoscope; in eidophone, instead of the frail lamina of soap-suds, she has a stretched membrane of india-rubber to receive the vibrations, and on this is spread a thin layer of some pasty substance which will retain the record made by the vibrations of the membrane. These voice-flowers are not the simple, visual forms corresponding with the vibrations of the air set in motion by the voice. The waves generated in the closed bowl of the eidophone are reflected again and again from the sides of the vessel. The volume of air inclosed has its own rate of vibration; the stretched membrane has also its own rate, which in turn is modified by the character and thickness of the paste spread upon it. Added to these are molecular forces of cohesion and adhesion between the particles of paste, and again between the paste and the membrane. The form which grows into shape is the resultant of all these complicated forces, and, in some instances, new elements of change have been added. A glass plate is placed on top of the vibrating membrane and moved over it. We have a new body introduced with its proper rate of vibration, besides a mechanical motion further to complicate the problem.

The results are very wonderful and beautiful, and open up a field for investigation which is most interesting; but so far we have the resultant of many forces, not one of which has been weighed and measured. In a letter, Mrs. Hughes, replying to some questions asked in the hope of greater accuracy, says: "The notes producing the figures vary necessarily with the weight of material used and the tension of the membrane, so that any one note may, under different circumstances, produce different figures, and conversely, different notes may, under different circumstances, produce similar figures."

The daisy forms (Fig. 3) were sung into shape, she says, by extremely low notes, very softly sounded, some of them by A in the first space of the bass clef—a wonderful note to be reached by a woman's voice, whose highest note is the B flat above the treble clef, a compass of over three octaves. Sometimes geometrical forms, not given in the illustrations, were produced by the highest notes of her voice, while the serpent, fern, and tree forms were made by singing her middle notes with great intensity.

Among some of the first experimenters of hearing with the eyes, were Messrs. Lissajous and Duhamel, whose researches in that line are known to all of us. The more recent men who worked in this field are Leon Scott and Dr. Koenig. The first is the inventor of the phonautograph, whose instrument gave a more comprehensive sound-writing; and the latter for making sound visible by a compound series of flames produced by a single burning jet connected with two or more tubes, and combined with a series of resonators. This has been exceedingly serviceable in the elucidation of those obscure qualities of sounds, of which he was enabled to distinguish different voices and instruments, even when the pitch and intensity of the notes are the same.

It is useless to dive into the minute description of those apparatuses, etc., as they may be found in all works on modern physics.

Early last April I had occasion to apply the principles demonstrated by the work of Chladni and Mrs. Hughes to another and highly important branch of our science. The result of these experiments will probably be made known to the members of this Congress by my colleague, the distinguished American physician, Dr. George Engleman, of St. Louis, with whom I was engaged in the task of bridling the faradic current and accurately measuring and calculating the number of interruptions of the faradic machines used by our electro-therapeutists, and observing the physiological action at the various rates of interruptions. Dr. Engleman, as I understand, will detail the exhaustive research he and I have made in this direction in the section of electro therapeutics or physiology.

By means of sensitive diaphragms and a dry powder, like lycopodium, I obtained visual pictures of regular geometric shape corresponding accurately to the number of breaks in the current. In this instance I employed a hollow cylinder about three inches in diameter and about six inches long, over which I stretched an elastic membrane. Upon the centre of this membrane a small part of dry lycopodium was dropped and the cylinder was placed upon the diaphragm of a telephone receiver, the open end next the diaphragm. With each change in the number of interruptions in the faradic current, the powder assumed a different geometric form, and we were thus enabled to calculate the number of interruptions with absolute accuracy as they ranged from 3,000 to 50,000, and as I have since learned, up to 102,000 per minute. Some of the figures resembling those of Hughes and Chladni.

When sonorous undulations impinge upon the delicate diaphragm of a phonograph the latter is set in vibration. Its particles move to and fro in some way or other. The complexity of their motion will depend upon that of the air from which it was derived. This brings me to what I have to say of the phonograph itself.

In the annals of modern inventions the phonograph (Figs. 4 and 5) and its inventor, Thomas A. Edison, will always occupy a foremost place. Years ago, had a scientist had the temerity to proclaim that he could record and reproduce human speech, the sounds of music, and other living tones, and preserve them for ages just as the pathologist guards his specimens from the ravages of time, he would have been proclaimed a

sorcerer and perhaps burned at the stake, as were the so-called witches in my own country only two centuries ago. How times have changed! I need not rehearse the early trials and tribulations of the illustrious gentleman, whose ideas crystallized in tangible form are before you. It would simply be a repetition of the fortunes of all the great observers whose work has become historic. He fought against almost insurmountable obstacles and overcame them. Let me briefly recount the story of the discovery of the phonograph.

Edison's early phonograph was founded upon the discovery, that if a delicate diaphragm or sounding-board is provided with a sharp point of steel, its vibrations under the sound of the human voice will cause the sharp point or stylus to make a series of impressions or indentations upon a sheet of wax or other analogous material passed beneath it. Such indentations, though microscopic, are sufficiently defined to cause similar vibrations in the diaphragm, if the stylus is again passed over the furrow of indentations, and this reproduction is loud enough to be distinctly heard. Thus, the phonograph, in its primitive form, consists of a little sounding-board carrying on its under surface a needle point, and a sheet of wax so held as just to touch the needle. The sound-waves of the voice cause the sounding-board or diaphragm to vibrate with a rapidity varying with the pitch of the note.

If the wax sheet was made to move slowly along while the sound-waves of music, talking, or singing were allowed to impinge upon the sounding-board, the result was found to be a continuous line of minute indentations, corresponding in depth and geometric form to the outline of the original sound-waves.

These lines were continued side by side, until the smooth surface of the sheet was covered over with indentations.

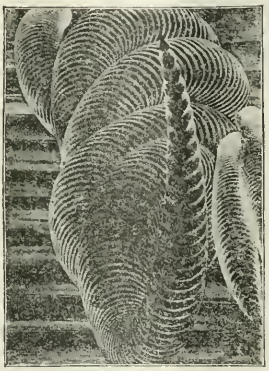
This done, on raising the stylus and the diaphragm and again placing it in the first furrow of indentations, the stylus, as it travelled through the series of lines, caused the sounding-board again to vibrate, sending out an exact repetition of the sounds as they were originally impressed in the wax; although somewhat changed in pitch, intensity, and quality, they were yet of sufficient accuracy to demonstrate the possibility of recording and reproducing living sounds.

Photographs and measurements of these tracings of the sound waves on the wax cylinders, etc., were recently made by Hermann, of the Königsberg physiological institute, and are of great interest in the study of the phys ics of sound.

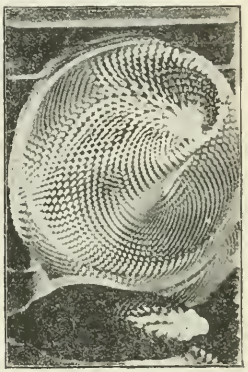
The defects of the first phonograph were so great that Edison found it impossible to interest capitalists in perfecting it. At the same time eminent men in Europe were not wanting, who predicted great things for the phonograph of the future. What it accomplished was so wonderful that inventors were tempted to work over it.

But the phonograph of to-day, the novel and remarkable instrument, has passed much of its experimental stage. It is now practically successful in every respect,

Seaweed or Landscape Form.

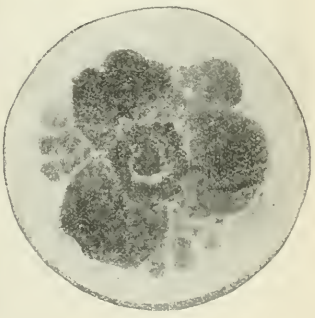


Serpent Form.



Cross-vibration Figure.

Tree Form.



Pansy Form.

Fig. 3.—Showing Voice Figures of Mrs. Hughes—Produced by Means of the Eidophone.

and must be regarded as instrumental in opening up a new field for scientific research, and making one more application of science to industry. Its aim is to record and reproduce speech; to make a permanent record of vocal or other sonorous vibrations; to recreate these vibrations in such manner that the original vibrations may be again imparted to the air as sounds.

Notwithstanding all that has been said against the properties of the sounds reproduced by the phonograph, there is no doubt but that they are reflected in absolute integrity, but somewhat decreased in volume. In other

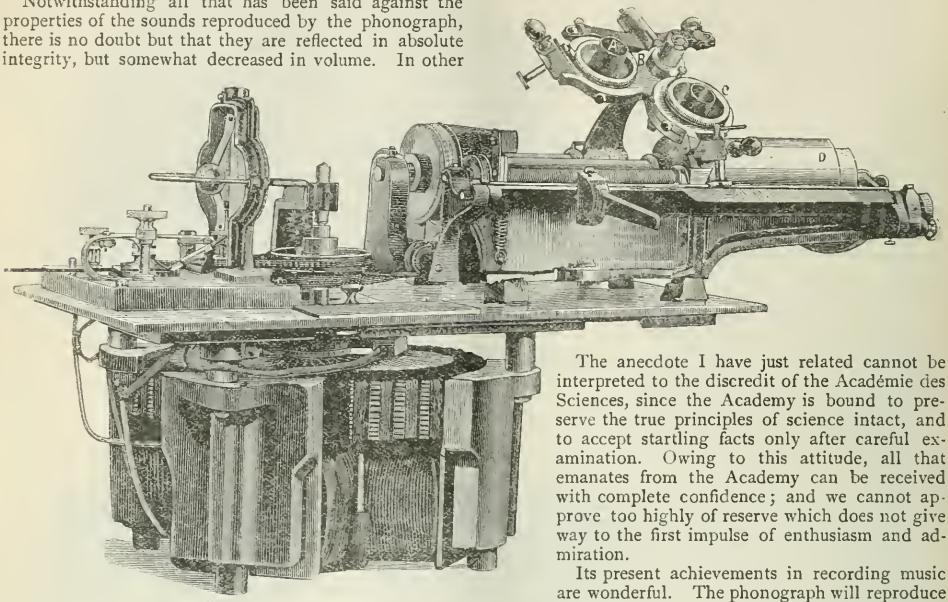


FIG. 4.

words, I mean to say that the record of a sound, as it is given out or as we hear it coming from the phonograph, is an exact miniature of the original. And this is easily explained if we bear in mind the fact that the diaphragm can only record those wave-pulses which are caught up and encompassed by the recording trumpet. The others lose themselves in space, yet the pitch and quality remain unchanged.

The phonograph is really a natural outcome of the telephone; but unlike any form of telephone, it is mechanical and not electrical in its action.

The following anecdote is told by M. Paskos, Mr. Edison's agent, who presented the first phonograph for exhibition before the academicians of Paris. It was a curious spectacle to witness the expression of the faces of these academicians when M. Paskos caused the wonderful instrument to speak. A murmur of admiration was heard from all parts of the hall, a murmur succeeded by repeated applause. The learned Academy, generally so cold, had never before abandoned itself to such enthusiasm, yet some members of a sceptical turn of mind, instead of examining the physical fact, ascribed it to moral causes, and a report soon ran through the room which seemed to accuse the Academy of having been mystified by a clever ventriloquist. Certainly the spirit of ancient Gaul is still to be found among the French, even in the Academy. One said that the sounds emitted by the instrument were precisely those of a ventriloquist. Another asked if M. Paskos's face and lips, as he turned the instrument, did not resemble the grimaces of a ventriloquist. A third admitted that the phonograph might emit sounds, but believed it was much helped by the manipulator. Finally, the Academy requested M. du Moncel to try the experiment, and as he was not accustomed to speak into the instrument it was unsuccessful, to the great joy of the incredulous. Some members of the Academy, however, desirous of ascertaining the real nature of the effects, begged M. Paskos to repeat the experiment before them again, under such conditions as they laid down for him. M. Paskos complied with this request, and they were absolutely satisfied with the result. Others still remained incredulous, and it was necessary before they accepted the fact that speech should be reproduced in so simple a way.

The anecdote I have just related cannot be interpreted to the discredit of the Académie des Sciences, since the Academy is bound to preserve the true principles of science intact, and to accept startling facts only after careful examination. Owing to this attitude, all that emanates from the Academy can be received with complete confidence; and we cannot approve too highly of reserve which does not give way to the first impulse of enthusiasm and admiration.

Its present achievements in recording music are wonderful. The phonograph will reproduce any kind of music—singing, the piano, violin, cornet, oboe, etc.—with a beauty of tone and accuracy astonishing to the musician. It is possible also to magnify musical sounds without distorting them, as often happens where speech is concerned. Thus, when a *musicale* is arranged, the phonograph is put up so as to be heard one hundred feet away. Even should the phonograph never reach greater perfection than its present stage, which is hardly possible in this age, it is and will

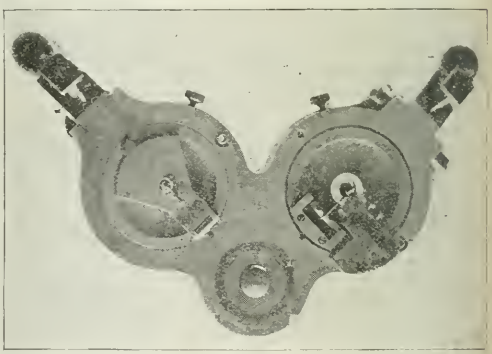


FIG. 5.

continue to be of the greatest use to musicians, elocutionists, authors, editors, and physicians. To this last-named profession, of which I am a member, I have been the means of directing their attention to the practical use of the phonograph in medicine.

For several years past I have devoted considerable time to studying the uses to which as a recorder of the sounds of disease and organs in health, upon which the physician

depends so much for the accuracy of his diagnosis. Already I can say, notwithstanding its many imperfections, the phonograph is made to record many of the characteristic sounds of disease of the respiratory apparatus. For example, when in good voice the vocal expression of singers may be recorded and kept for comparison with the sound produced in case the vocal bands are affected. Time and again have I realized great benefit from the phonograph of tenors, baritones, and bassos among my patients, and not only have thus been able to recognize the difference in shade of tone and quality, and thus direct my attention to remedying the defect, but patients have also been able to recognize the deterioration of their voices from the normal standard themselves. This is one of the reasons why I desire to forcibly place before you the possible advantage the phonograph possesses in the perfection of elocution and singing, and to laryngologists in particular.

As a specialist in the department of medicine involving diseases of the throat, nose, and chest, I owe much of what little success I have had to the phonograph. Naturally, my practice brings me into direct contact with celebrated people of high vocal culture, many with already fully trained voices, and so from the outset the phonograph which I made as standards of singing, speaking, etc., represented a condition very near the standard of perfection which both teachers of singing and elocution are striving to attain. The excellent artists whose records I have taken, and treasure very much, were those educated in singing in the various methods of the German, Italian, and French schools, and representing over and over again these phonographs, I have been able to detect readily any change or oncoming change in the normal action of the vocal bands. It is astonishing to hear the difference in the methods that the special training of one of these schools gives to singers, to actors, and elocutionists; and more astonishing it is to compare singers of a mixed school with those whose singing is simply a natural exponent of fine vocal organs plus the training. The music that is in the well-trained artist rings forth its melody in pure musical sound from out of the indented pulse-waves imprinted on the cylinder of wax. By utilizing these for a comparative study with the lesser natural and other voices, I have reached much profit in the study of the different shading of tones and quality possessed by their vocal organs.

Mr. Edison's intention is now nearly fulfilled in being able to manufacture a quantity of instruments as perfect as the best of the present experimental machines, and to make them so automatic in action and so easily adjusted that everyone who uses a sewing-machine or typewriter or a telephone, can use the phonograph; we concede at once what wonderful field is before it.

The price of phonographs is nominal, and the new wax cylinders upon them cost scarcely more than writing-paper. Once a cylinder has been engraved or has had a message recorded upon it, it can be passed through the phonograph any number of times apparently without deterioration. I possess some valuable phonograms which have been read, sung, and played thousands of times by the phonograph, and no special indication of wear is observable. Finally, bear in mind that having once obtained a good phonogram, it can be multiplied and duplicated at small cost. What a wonderful prospect opens before us. This duplication of phonograms is not known to us as yet, but no doubt experiment will give it to the public, and duplication will be as common as in photography.

Imagine what the phonograph will do for the man on the borders of civilization. It will supply him with books in a far more welcome shape than print, for phonographs will read themselves. The mail will bring him the latest play from London, or opera from Vienna. If he cares for political speeches, he can have the *Congressional Record* in the shape of phonograms. It is possible even to imagine that many books and stories may not see print at all; they will go into the hands of their readers or hearers rather as phonograms. But think what a musical critic can do for his public. He can give whole arias from an opera or entire movements from a symphony, by way of proof or illustration. The very tones of an actor's or singer's voice might be reproduced in the morning notice of last night's important dramatic or musical event.

In music, as already hinted, the value of the phonograph in its present stage is indisputable. Musicians are divided, probably always will be, as to the manner in which certain famous symphonies ought to be conducted. The metronome marks used by Beethoven are at best but uncertain guides; while no written directions as to dynamic values, expression, etc., are worth much. The phonograph will make it possible for the musician of the future to know exactly how our composers wished their music given, for it will repeat that music as played today, with every shade of expression, with all its infinite changes of time. Moreover, the phonograph offers to the composer that long-sought instrument, an automatic recorder of improvisation upon the piano or other instrument. In the far-off future, when our descendants wish to compare our simple little Wagner operas with the complex productions of their own times, requiring, perhaps, a dozen orchestras playing in half a dozen different keys at once, they will have an accurate phonographic record of our harmonic simplicity. In logic we say, that where a premise is established the deduction is evident. So what can be done in one instance can be done in all other similar instances. Those persons who smile incredulously when it is said that the perfected phonograph will do away with letter-writing, will read to us, sing to us, teach us foreign languages with their proper accents, teach us different methods of singing, elocution, give us books, music, plays, speeches, at almost no cost, become a constant source of instruction and amusement, must have forgotten the ridicule they heaped upon the rumor that an American inventor proposed to talk from New York to Chicago. The achievements of the phonograph will be no less wonderful than those of the telephone.

Marvellous as this instrument is, it is still quite new, and it is impossible to say to what degree of perfection it may yet be carried. It has already opened the door to an entirely new and untried field in the realm of sound. It is a new instrument in the hands of science, wherewith to search out laws in nature yet unknown. Already it has suggested many valuable uses. Undoubtedly it is the most remarkable invention of this century.

If time permitted I should talk more in detail regarding the use of the phonograph as a teacher of singing, elocution, etc., but from the demonstration of phonograms one must be satisfied of the truth and of the value of the phonograph.

I am still in hopes, and notwithstanding the fact that at present the microphone is very unsatisfactory in its workings in many respects, to be able to record the sounds of the heart and respiratory tract both in health and disease. The value of such record, I need not tell you, would go a great way toward the practical education of our medical students in the groundwork of physical diagnosis.

I have already made several records of pathognomonic sounds, but my work, owing to the pressure of time and the responsibilities of a large practice, is still so incomplete that I hesitate to present it to such an august body of distinguished medical men.

At the next Congress I may show you the cabinet of records, which will demonstrate aurally the sounds of disease of the air-passages and heart just as we hear them in the hospital wards, and as we recognize them from the descriptions in our books, of lessened or intensified pitch and changed quality.

In my own specialty the phonograph has been of much service. In all diseases affecting the vocal bands we are sure to have a change in the character of the

vocal sounds. These sounds in not a few instances are pathognomonic, but as one.

Experience and observation have not been extensive enough, we have as yet no accepted classification, without which phonographic records would signify little. With a competent microphone, as I hope and feel it can be perfected, both the classification and recording of these sounds will be made so that all of us, even the general practitioner, will be able to make his diagnosis more positive.

To my American colleagues, and to those of other countries who may chance to come to my city, I extend a cordial invitation to visit my workshop, which unfortunately I could not carry with me, and see the work as it has progressed up to this time.

I shall be ever ready to demonstrate and show you how far I have succeeded, and so give you the ocular proof of what I have laid claim to in this paper.

460 Lexington Avenue.

OBSERVATIONS ON PHYSIOLOGICAL PULMONARY ATELECTASIS.

Being Part of a Report of the Committee on Clinical Medicine of The Medical Society of the State of California.

By ALBERT ABRAMS, A.M., M.D., F.R.M.S., Chairman of the Committee.

San Francisco, Cal.

Professor of Pathology, Cooper Medical College; President of the San Francisco Medico-Chirurgical Society; Vice-President of the Medical Society of the State of California.

Mr. President and Fellow Members: At a previous meeting of this Society I presented a paper on "Pulmonary Atelectasis as a cause of Anæmia" ("Transactions of The Medical Society of the State of California, 1892"). I will succinctly recount the essential facts of that paper.

There are present over the thorax of apparently normal individuals constant areas of diminished lung resonance, varying from dulness to flatness as obtained by percussion. These areas vary in number and situation as far as the individual case is concerned, but they admit in the aggregate of definite localization. The areas of dulness or atelectatic zones, as I will call them, are no longer demonstrable by percussion after repeated forced inspirations. The atelectatic zones are dependent on circumscribed pulmonary atelectasis, or collapse of limited portions of the lung. I have referred to this form of atelectasis as physiological, with the object of employing the term for differentiation only. The physiological atelectasis under consideration is an eradicable condition dissociated with any demonstrable lesion. When the atelectatic zones are multiplied or augmented in area, especially in young people, they are associated with the symptomatic complex of anæmia, and finally, when the atelectatic zones are dispelled by respiratory gymnastics, the syndrome of anæmia disappears, while its recrudescence is always associated with a reappearance of the atelectatic zones.

My observations have been extended since the publication of my original paper, and the results attained confirm my primary conclusions. While it is true, from the stand-point of the physiologist, that the lungs during life are in a stretched condition, it is equally true, from the stand-point of the clinician, that certain portions of the lung are collapsed and deprived of sufficient air to yield a dulness, or in some instances a flatness, on percussion. These areas of dulness vary, as determined by linear percussion, from a twenty-five cent piece to a dollar in size, or even more.

The atelectatic zones are only permanently absent when the lungs are emphysematous, and temporarily so after repeated deep inspirations. I have noted in my investigations that after forced inspirations are made the atelectatic zones, in adults as well as in children, can be dispelled, reappearing in a few minutes when tranquil breathing is resumed, and continuing so until an increased demand is again made on the capacity of the lungs.

The facts just enunciated do not refer to the areas of lung tissue intermediary to the atelectatic zones, for we already know from the observations of others, especially Da Costa, that when percussion is made over the lungs by respiratory percussion, as it is called, at the end of full inspiration, a sound of higher pitch and vesiculotympanitic quality is obtained; whereas a held expiration diminishes the resonance.

In the accompanying illustrations (Figs. 1 and 2) I have projected a composite picture defining the situation

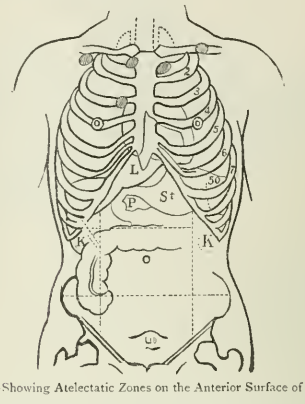


Fig. 1.—Showing Atelectatic Zones on the Anterior Surface of the Chest.

of the atelectatic zones, based on examination of over one hundred apparently healthy individuals, children as well as adults.

It may be remarked that the atelectatic zones on the posterior surface of the chest-wall are more frequent, and admit of more definite localization, than those on the anterior surface of the thoracic wall.

The atelectatic zones, as shown in the illustrations, do not represent the only areas of lung tissue that are normally incapacitated, for aside from the fact that collapsed lung remote from the chest-wall will elude percussion, there are other superficial areas of too limited an extent to yield a dulness on percussion. The practical conclu-

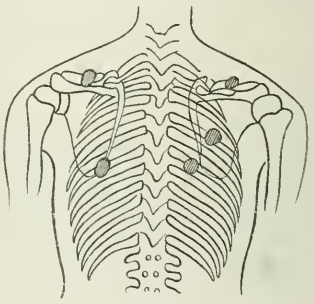


Fig. 2.—Showing Atelectatic Zones on the Posterior Surface of the Chest.

sions that can be formulated as a result of these observations may be summarized under the following groupings:

1. The relation that pulmonary atelectasis bears to anæmia.

2. The mistakes that may accrue from misinterpretation of the physical signs in the examination of the chest, and the correction of the conventional errors of topographical percussion.

3. The relation that pulmonary atelectasis bears to tuberculosis.

4. The aid afforded to auscultation by the elimination of atelectasis.

1. I have already shown in my previous paper that

anæmia of pulmonary origin exists, and furthermore, that this anæmia is associated with extensive areas of lung dulness. That when this latter is corrected, amelioration and recovery from the anæmia occur. I have also referred in my original paper to the fact that increased respiratory activity is of great therapeutic value in anæmia from any cause.

2. The mistakes that may accrue from misinterpretation of the physical signs of atelectatic dulness, from dulness caused by lung consolidation, are many, and in consequence of mistakes occurring in my own practice and in the practice of other physicians, I invariably adopt the expedient of having the patient practise forced breathing before making an examination of the chest.

If inflation of the lung cannot be secured with the patient in the erect posture, I place him in the right or left lateral posture, according to whether an examination of the left or right lung is desired.

I have often found that dulness produced by lung consolidation will frequently disappear, to be supplanted by resonance after forced deep breathing.

This fact may, to the novitiate in physical diagnosis, be mistaken for atelectatic dulness. Taken altogether, percussion of the lungs is an untrustworthy method of diagnosis unless it is controlled by auscultation. I hold that topographical percussion, as obtained ordinarily, is of inconstant value. The limitation of organs by percussion, especially of the heart, will vary from day to day, and the percussional area of dulness in the same case, and at the same time, will be variously obtained by different diagnosticians. The borders of the heart, liver, and spleen are dependent on the degree of lung inflation, and must vary according to the activity of respiration.

Topographical percussion must always be based upon the state of pulmonary inflation, and the results governed accordingly.

3. The relation that atelectasis bears to pulmonary tuberculosis is an important one. A properly inflated lung affords adequate protection against pulmonary tuberculosis. A collapsed area of lung affords a nidus for the specific microbes. The facultative anærobins thrive best in an illy-ventilated lung. The foregoing statements are borne out by theory and statistical evidence.

Pulmonary tuberculosis is frequently initiated by the symptomatic picture of anæmia. This anæmia is unquestionably of pulmonary origin, and is associated with demonstrable atelectatic zones.

The atelectatic zones correspond with the destructive routes followed by incipient pulmonary tuberculosis.

4. The aid afforded auscultation by elimination of atelectasis is obvious. Auscultation of the lungs should always be conducted with the patient in different postures, the object being to utilize the actual respiratory capacity of the lungs, thus eliminating the auscultatory phenomena of atelectasis and accentuating abnormal sounds which may be present.

I have recourse to the following manœuvre for eliciting pleural friction-sounds when absent, and accentuating them when present, by having the patient lie on the suspected side or region for half a minute or longer, after having taken a deep inspiration. This position favors the approximation of the two pleural layers.

Now, when the patient adopts the sitting posture and attempts forced expiration, a friction-sound is heard which is usually intensified during the subsequent inspiration.

Unless a deep inspiration is taken before the patient lies on the suspected side, crepitant râles, concomitants of atelectasis, will be heard. I consider the foregoing manœuvre of more value for diagnosis than any of the methods usually described for eliciting and differentiating the same phenomena.

Low Temperature.—Dr. George R. Dean, writing in the *Medical and Surgical Reporter* of June 30, 1894, relates a case of cystitis in which the temperature fell on several occasions to 92° F.

A CASE OF LYMPHADENOMA (HODGKIN'S DISEASE) ACCOMPANIED BY FEATURES CHARACTERISTIC OF MYXŒDEMA, AND OTHERS SUGGESTIVE OF ACROMEGALY.

By W. A. CROSS, M.D.,

JENKINTON, PA.

I DESIRE to put the following case on record on account of its unusual complications, and the manner of their development.

Mrs. H——, aged thirty-four, American. A person of more than ordinary intelligence, of good family history, and in the enjoyment of exceptionally good health until the commencement of her last illness. She was a happy wife and mother. Menstruation appeared at fourteen years, and was always normally performed. She gave birth to five children, two boys and three girls, and had no miscarriages. There was no inherited predisposition to glandular troubles.

In July, 1892, there developed a very troublesome cough of a spasmodic character; the paroxysms occurred both day and night, and greatly interfered with her sleep and rest. I could not discover any lesion which would account for its origin and persistency. I made use of all sorts of means for its relief, with very poor success. Antispasmodics made some impression, but the best results were obtained from the administration of an emulsion of cod-liver oil; this gave her considerable relief for a time.

Her good constitution enabled her to resist the evil effects of these frequent paroxysms, with the attendant loss of sleep and rest, for a long while. She remained under my care for one year, and then, as I had failed to afford her any adequate relief, and had not discovered the nature of her disease, she proposed putting herself under the observation of some other physician.

In July, 1893, she consulted Dr. Louis Jurist, of Philadelphia. By this time her general health had begun to fail; she had a cachectic appearance suggestive of tuberculosis, or some malignant disease. I knew Dr. Jurist to be a careful observer, and trusted that he might be more successful than I in getting at the cause of her trouble, and waited patiently for his judgment of the case.

I did not see the patient again for a period of six weeks, and then, while visiting another member of the family I had the opportunity of observing her carefully. She still had her cough, had lost much flesh, and was very anæmic. My attention was called to a swelling on the right side of the sternum, high up. I believed this to be connected with her disease in some way, but I did not imagine its significance at that time.

The next time I saw the patient was October 22, 1893. By this time her condition was such that she could not visit Dr. Jurist at his office in the city, and, at his request, I took charge of her at her home.

I do not know when the myxœdematous features first became apparent, but when I saw her at this time my attention was attracted to them immediately. Her physician did not write me fully in regard to the sequence of development of the various features, but said "Mrs. H——'s case interests me very much, and I am obliged to you for your willingness to study it with me. Many things have passed through my mind regarding her condition: tubercle, myxœdema, acromegaly, and malignant disease have all had fair consideration. I do not quite understand the bony protrusion on the right of her sternum. Is the growth in her neck secondary? Her wasting would indicate a serious encroachment on her vitality. Might she not have a mediastinal tumor? I would gladly hear from you."

My examination of the patient at this time discovered the following conditions: She presented many of the characteristic features of myxœdema. The physiognomy was dull and mask like, but not to an exaggerated degree; the face was not enlarged to the extent that is usual in these cases; the skin was dry and of a peculiar yellow-

ish white color; both upper and lower eyelids were swollen, with a puffiness of the tissues below the lower lids; the nose was thin, having a pinched appearance; the mouth was natural, excepting the deep lines on either side of it; the pendulous lower lip was absent; the tongue was a little thickened; there was a slight hesitancy in her speech, and articulation was not perfectly distinct; the scalp was dry, the hair scanty, dry, and brittle; the hair which is usually found on the forearms and legs had disappeared, also that in the axilla and about the pubes; the forearms were enlarged and thickened, particularly at the wrists, indicating an enlargement of the bony tissues; the hands were large and puffy, with a remarkable clubbing of the finger-tips; the finger-nails were thickened and curved to an unusual degree; the hands and fingers were so swollen that they were clumsy, and the patient could not make use of either needle or pen; the legs and feet showed the same abnormal features as were present in the upper extremities. A prominent peculiarity of the foot was the projection of the calcaneum and a welt of hard tissue along the outer aspect of the foot.

There was an enlarged gland about the size of a hen's egg on the left side of the neck, just above the clavicle, and posterior to the sterno-mastoid muscle. The mind was clear, memory apparently unimpaired. She conversed intelligently, had poor appetite, digestion was not good, the bowels moved twice daily, the kidneys acted all right. She would have slept well if it had not been for the cough; vision was normal; had no pain; felt weak; heart's action was rapid and impaired; complained of shortness of breath. There was some difficulty in swallowing. The temperature ranged from 98° F. in the morning to 99° F. in the evening; pulse, 105 in the morning; 120 in the evening. Complained of not feeling warm; there was no perspiration. Passed forty-six ounces of urine in twenty-four hours, of low specific gravity, containing no albumin, no casts, no sugar, phosphates in abundance, urates below normal; reaction acid; menstruation normal.

The patient, although weak, was up and about, overseeing her household affairs; locomotion was impaired, and she tired easily, but she still possessed a considerable amount of will-power.

A powdered extract of thyroid gland was administered three times per day for about four weeks, with apparently no improvement; the raw glands finely minced and taken with her other food, were tried for a while, but these were so distasteful to her that their use was soon discontinued.

From the last week in November to the middle of December no active treatment was employed; during this period she grew rapidly worse, the myxœdematous features became more pronounced, the cough was persistent, there was no desire for food, and there was a scanty secretion of urine; for a number of days she did not pass more than one pint in twenty-four hours. The lower limbs became œdematous, she was dull looking and acting, slept the most of her time day and night. The sleep was a restless one, disturbed not only by the cough, but by ugly dreams which really amounted to hallucinations. She could not lie down, neither could she lean back in her chair, owing to the dyspnœa occasioned by such positions. The only way in which she could get rest was by sitting in her chair, leaning forward with her head resting upon a pillow placed upon a table in front of her. In such a posture she sat and slept the most of her time. Lymphoid tumors developed on the right side of the neck, and in the right axilla. Menstruation was missed for the first time in November, and did not occur again.

Dr. J. C. Wilson, of Philadelphia, saw the patient, in consultation, November 22, 1893. His diagnosis was lymphadenoma accompanied by features suggestive of both myxœdema and acromegaly. He advised the use of the thyroid extract, and also Fowler's solution to the point of toleration.

A thyroid extract prepared by Dr. George W. Crary, of New York City, was obtained. As an initial dose we gave two drops three times per day, this was gradually increased until we reached eight drops t.i.d.; at this point the dyspnœa and disturbed heart's action became so great that it was necessary to discontinue its use for a couple of days. We resumed with a two-drop dose, and added a drop to the dose each day, until fifteen drops t.i.d. were taken, without any inconvenience whatever.

As we advanced the second time, her condition improved rapidly; her paroxysms of coughing became less frequent and distressing. She did not sleep so much through the day, and her rest was less disturbed at night. She could lean back in her chair, and could lie down in bed. The appetite improved. She could swallow solids without difficulty, and any reasonable article of food could be taken without discomfort.

I must not neglect to state that the arsenic occasioned so much gastric distress that we were obliged to discontinue its use; the appetite did not improve until after the arsenic was dropped.

The quantity of urine secreted steadily increased until it reached seventy-two ounces daily; it was analyzed frequently, the urates remained a little below normal in quantity, phosphates in abundance, no albumin, no casts, no sugar, specific gravity 1.020 to 1.025.

After the thyroid extract had been used for about three weeks the swellings in the various parts of the body showed signs of decrease. The face was the first to lose its puffiness. The enlargement of the right forearm, wrist, and hand became reduced in size. One week later the same process took place in the left upper extremity, next followed the right, and then the left lower extremity.

As the œdema decreased the skin lost its glazed appearance and commenced scaling, the new skin was soft, and was often moist with perspiration; a new hairy growth appeared upon the arms, legs, and head. The clubbed condition of the fingers was less apparent, and she was able to use her needle once more.

That which interested and astonished me most was the attempt to correct the exaggerated curve of the finger-nails; they rapidly changed their shape, and two of them on the right hand became almost normal in appearance.

The œdema of the legs and feet became so much reduced that the patient was able once more to wear her shoes, to walk about her room, then to go up and down stairs, to walk out upon the piazza, and finally to take a sleigh-ride.

The glandular trouble did not improve, but went from bad to worse. About the middle of February a retrograde change commenced, the cough became more annoying, the heart's action more feeble, the appetite failed. Swallowing became a distressing act, soft food could be gotten down fairly well, but the attempt to swallow liquids occasioned a paroxysm of coughing and strangling which was painful to witness; the taking of a meal was dreaded, and consumed a great deal of time. Liquids were taken through a tube, and by certain manœuvring were finally swallowed. A stomach-tube was passed without much difficulty, but the patient preferred not to use it, and persisted in her own way of getting food and drink down her œsophagus.

The weakened action of the heart and the accompanying dyspnœa necessitated the withdrawal of the thyroid extract for a few days. As no relief was experienced from its discontinuance we again resumed its administration, but it had no further control—the œdema, dyspnœa, dysphagia, drowsiness, hallucinations, and bodily weakness increased steadily, and she died March 15, 1894.

Dr. Jurist continued to see the case at intervals during her illness, and Dr. Wharton Sinkler, of Philadelphia, saw her in consultation a few days before her death.

Dr. Boyer, of Philadelphia, made an examination of the blood; the result was very interesting. There were

five million eight hundred thousand red corpuscles to the cubic millimetre, and forty eight thousand white corpuscles to the cubic millimetre, or a proportion of about one white to one hundred and twenty red. The percentage of hæmoglobin was about sixty.

It is greatly to be regretted that a post mortem could not be had; it would have been exceedingly interesting, and would most likely have thrown some light on the pathology of the disease. It would have indicated the condition of the spleen and internal lymphatics, and would have determined whether there was present a mediastinal tumor, and would also have shown the condition of the bronchial glands.

In summing up the case, we notice first the persistent spasmodic cough. This cough was evidently dependent upon either the pressure of a mediastinal tumor or enlarged bronchial glands, perhaps both. The probability of the existence of a mediastinal growth early in the trouble is enhanced by the development of the embarrassed breathing and difficult deglutition among the first features in the disease.

The cough had existed for very nearly a year before the patient showed signs of cachexia. During this period she was to all outward appearances well. She attended to her household and social duties, was cheerful, had a good appetite the most of the time, the bowels moved regularly, and she menstruated normally.

We have next the increasing signs of cachexia, which for a long time could not be accounted for. Then came the tumor on the right side of the sternum, followed soon by the enlarged gland on the left side of the neck, and the apparent disappearance of the thyroid gland.

With these changes came the development of the characteristic features of myxœdema—the multiplication of the lymphoid growths in different parts of the body. We have the remarkable clubbing of the finger-tips, the curve of the finger- and toe-nails, the apparent projection of the calcaneum, and the welt along the outer edge of the feet, suggestive of acromegaly.

The effect of the thyroid extract upon the myxœdematous features was for a time most remarkable, followed in a short while by its failure of control, with increasing weakness, stupidity, hallucinations, dyspnœa, cardiac palpitation, suffocation, and death.

Drs. J. C. Wilson and Wharton Sinkler concur in the opinion that the case was originally one of Hodgkin's disease, and that the myxœdema occurred symptomatically, as a result of involvement of the thyroid gland due to the lymphadenoma.

I am inclined to the belief that there existed a mediastinal tumor, as was insisted on by Dr. Jurist, and that this growth was directly or indirectly the cause of the cough and of the dyspnœa. Why the paroxysms of coughing should have become less frequent and severe, and the ability to swallow should have improved under the use of the extract, I am unable to understand.

The case, from any stand-point, was an exceedingly interesting one, and worthy of putting on record.

Seventeen-Year Locusts.—The newspapers have reported several cases of death following bites from these insects.

A New Location for the Soul.—The champion title of the year must surely be "A New Systematic Treatment of All Diseased Conditions, from Strict Electrical Polarization, Adapted Particularly for Examinations and the Treatment of Disease. Embracing Some Entirely New Principles Concerning Portions of Our Organism. Also, An Entirely New Motive Power Regarding the Cleansing and Circulation of the Blood by Strict Electrical Polarization, Locating Exactly the Seat or Throne of that Eternal, Immortal, and Ever-Controlling Principle Denominated the Soul or Mind, Together with Very Many Other New and Important Facts and Principles. By A. H. Stevens, M.D., E.D." Dr. Stevens locates the Soul in the corpus callosum.

Where Our Drugs Come From.—"Principal Exports to the United States" is the title of a pamphlet lately issued by the State Department, which is of especial interest from the fact that it gives the value of our imports, and the names of the products, and the countries from which they are derived. The report is compiled from the reports of the various consuls of this country, and the figures bearing upon the extent of the drug and chemical imports are interesting both on account of the magnitude of the commercial interests involved in the trade, and the fact that they show that the most remote portions of the earth are called upon to supply our demand for drugs and medicines. The figures given, with a few exceptions, cover the calendar year 1892, and the report is arranged to show the value of goods as "declared for export" in the various consular districts. From the Buda Pesth and Vienna districts of Austria-Hungary we receive drugs and chemicals amounting to $122,758. From Trieste insect powder and flowers amounting to $71,884. From France our imports included olive oil, drugs, chemicals, argols, dyestuffs, toilet articles, and perfumery, and amounted to $2,564,000. Germany furnished us with drugs, chemicals, dyes, colors, and essential oils to the amount of $9,193,849. Greece sent us $24,108 worth of sponges. From Italy we received olive oil, brimstone, canary seed, crude glycerine, soap, argols, orris root, almonds, licorice, sumac, and essential oils, valued at $4 909,704. The Netherlands sent us cacao butter, drugs, and dyestuffs amounting to $366,470. Corkwood worth $1,069,057, and argols worth $131,805, came from Portugal. The Batoum district, Russia, furnished us licorice root valued at $624,363. Spain furnished us cream of tartar, glycerine, licorice, saffron, corkwood, olive oil, and canary seed worth $1,505,505. Sweden and Norway sent us $82,055 worth of cod-liver oil and oxalic acid worth $18,090. Little Switzerland sent us anilines, dyestuffs, and chemicals worth $439,518, and enough argols and beef extract to make the total $475,760. We received from Turkey, in Europe, $403,013; attar of roses, $141,929; gum tragacanth, $55,620. From the United Kingdom, which seems to be a sort of clearing-house for the world, we received drugs and chemicals amounting to $12,570,180. British North America sent us $22,003 worth of senega root and $12,664 worth of sulphur. Sarsaparilla worth $67,577; vanilla, $710,580; fustic, $130,913; gum chicle, $475,665, and silver dollars, which are apparently a drug on the market, to the amount of $454,031, came to us from Mexico. China furnished cassia, $164,497; gall nuts, $5,730, and rhubarb, $16,454. Dutch India, gum damar, $64.729; gum copal, $30,452; cassia, $26,593. Japan, sulphur, $226,025; menthol, $23 391; camphor, $522,152. Philippine Islands, indigo, $16.369; ylang ylang oil, $10,002. Turkey, in Asia, licorice root, $1,023,710; opium, $451,431. New Zealand, kauri gum, $1,997,607. Tahiti (Society Is'ands), vanilla, $36,698. Honduras, sarsaparilla, $30,951; chicle, $4,604. Brazil, copaiba, $28,958; guarana, $8,078; castor beans, $22,774. Chili, nitrate of soda, $2,880,643; iodine, $579,313. Peru, coca leaves and elixir, $5,329. British West Indies, sponges, $236,555; dyewoods. $186,842; ginger, $40,734; pimento, $126,400. Dutch West Indies (Curaçao), aloes, $3,047. Guadeloupe, vanilla, $1,660. San Domingo, dyewoods, $38,307. Porto Rico, bay rum and oil, $3,494. Canary Islands, cochineal, $17,382; almonds, $3,877. British Africa, argols, $10,088; palm oil, $1,892. Egypt, senna, $36,627. Algiers, corkwood, $22,159. Morocco, canary, cumin, and coriander seeds, $4,735. Zanzibar, cloves, $289,688; clove stems, $4,058; gum copal, $51,836. British Asia, Aden, civet, $4,898. Calcutta, drugs, $4,272,076; saltpetre, $518,845. Ceylon, cocoanut oil, $937,331; cinchona, $73,185; essential oils, $73,015. Hong Kong, opium, prepared, $543,091; cassia, $79,170; medicines, $51,418. Singapore, gambier, $733,855; gum copal, $119,493.—*Pharmaceutical Era.*

MEDICAL RECORD:

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THE CONFIDENTIAL RELATIONS OF THE PHYSICIAN.

THE recent decision of Judge Cole, of the Supreme Court of the District of Columbia, holding that physicians and lawyers are not exempted from giving testimony when called upon in court, on the ground that such information was professionally confidential, will strike everyone who learns of it with becoming surprise. The ruling, wise as it may appear to the learned judge, will be viewed by the community at large in a widely different light. Were it not that this opinion has been deliberately rendered in a high court of justice by one of its officers, it might be looked upon as an attempt to create a cheap sensation, or a foolish bid for personal notoriety. Fortunately, however, its very absurdity is its death blow. Physicians have heretofore gone to prison rather than abuse their patients' confidences, and they will do so again when opportunities force them to such extremities, in spite of judges' edicts or juries' findings The opinion of the learned judge is contrary to that of all wise and good men since civilization began or social relations were in any way respected. It has been the bulwark of the Hippocratic oath, the fundamental principle of legal pleading, and the corner-stone of the Christian religion, to respect and hold sacred the privileged communications of such as come to their confessors for sympathy, forgiveness, and help. The very stability of society, the preservation of social relations, the maintenance of honorable intercourse, the most sacred obligations existing between members of the human family, rest upon the uncompromising integrity of those principles which even in heathen ages have made us trust one another. And yet for the sake of obtaining some evidence in a divorce suit an expounder of the law makes bold to insult the higher instincts of our humanity by aiming a blow at the honor of every man who hears a confession. If we mistake not, the learned judge will stand alone in his opinion, which is in itself a distinction sufficiently gratifying to him, perhaps, as opposed to that of the rest of mankind, and is worthy of remark on that account. It is difficult to imagine the great harm that would ensue if the professions of law and medicine, forgetting all their time-honored customs, their treasured traditions, and their sacred rights, should be compelled to abide by the absurd, illogical, and damaging decision of our learned interpreter of legal obligations. Let any practitioner of medicine think for himself of the disastrous consequences which would result from the disclosure in court of those family secrets which he has been forced to know, even within the circle of his own practice. And how much more for the profession at large!

Fortunately, however, the remarkable ruling will not affect any medical or legal gentleman outside the jurisdiction of the court in question, and will doubtless be very properly overruled in the next test-case. In any event, with the medical profession the opinion will always be, as it has always been, that no physician or surgeon must, directly or indirectly, under any circumstances or conditions, at no time or place, abuse the confidence of anyone who has trusted to his personal honor in the dire extremities of sickness and suffering. The man who would do otherwise, judge or no judge, would disgrace his calling, would prostitute the highest obligation of his profession, and outrage the most sacred trust that could be imposed.

THE DANGER OF THE COMMUNION CUP.

WE are pleased to know that the frequent discussion in these columns as to the danger of the communion cup in propagating disease is bearing fruit by transference to the columns of the daily press. The public is thus being educated to the necessities of the situation, and there is a reasonable hope that the claims of preventive medicine will be vindicated even against those whose faith in old forms have failed to listen to reason before.

The following telling experience, detailed by Dr. Albert S. Ashmead in a recent letter to the *Sun*, points its own moral:

"The last time I knelt at the communion altar of the Episcopal Church there knelt at one side of me a patient whom I knew, as I was treating him at the time, to be a syphilitic; his mouth had mucous patches, which make the disease especially contagious. This person took the cup before it came to me. Of course, I let the cup pass.

"At another time the person next to me, but following me in the use of the cup, was also a patient of mine, in an advanced stage of tuberculosis. The mouth of this person was in a condition dangerous to his neighbor.

"Of course, no man who is not a complete survival of the Middle Ages can assert that, under these circumstances, a man (if he knew) should apply his lips to a probably dangerously contaminated cup, trusting in the protection of the Lord, who has allowed hundreds, a hundred times, to perish in burning or earth shaken churches, while they were in the very act of worshipping Him."

Verily a little sermon in itself, and from a churchman and a physician, who views both sides reverently for Christianity's sake, and candidly for the vindication of truth.

The *Sun*, with its usual vigor of diction and directness of aim, thus valiantly takes sides with science and fact as against tradition and prejudice:

"When a physician writes to a newspaper, as one wrote to the *Sun* the other day, that he refrained from drinking from the chalice at a recent celebration of the Eucharist in the Episcopal Church, because before him two patients of his had sipped from the cup, the one afflicted with an odious and the other with a destructive

communicable disease, reasonable fears of the danger of the hallowed practice are excited even among the most devout of communicants; and such fears, thus justified, are quickly and widely diffused. Is it unlikely, then, is it not probable, that this alarm will become so extensive and so great that all churches whose doctrines require that both elements shall be administered to the whole body of communicants will be compelled to imitate the Rochester example, or adopt some other method devised for the same purpose, in order to save the communion in both kinds from perilous disease?"

The fact of danger is indisputable, and the conclusion for safety is irresistible. We are confident that it is only a question of time when, as the *Sun* says, all churches will be compelled to imitate the Rochester example. Contagion is no respecter of cups, men, or place, when the essential conditions of its propagation are present. The Christian will never yield up the cup; why should he object to its being clean and free from danger? Why one contaminated chalice against many safe ones?

OPHTHALMIC HEMICRANIA.

Under this title in *Il Raccoglitore medico*, January 10, 1894, Dr. Palombi gives an interesting account of hereditary ophthalmic hemicrania, together with a consideration of the subject at large. The patient whose case is cited belonged to a neuropathic family, his particular trouble originating with the great grandfather and being regularly transmitted for three generations, only one person in the entire family escaping. From his earliest recollection, the patient had suffered from migraine; but like his own father and grandfather, the intensity of the trouble reached its maximum between the ages of fifteen and thirty. The author very justly criticises the term ophthalmic migraine, or hemicrania, to describe an idiopathic affection in which ocular phenomena are contingents, like the agraphia, aphasia, paresis, etc., that sometimes accompany it. The chief phenomenon is the one sided headache. The work of Galezowski and of Charcot is passed in brief review, the history of the particular case in this migrainous family seeming to challenge a little the views held by these two observers: viz, that hemicrania is allied to epilepsy, and is an affection with an anatomical substratum of chronic progressive basilar meningitis, with secondary neuritis resulting from compression. Errors have been made in regard to migraine by confounding it with the various pathological states with which it may be associated. It is a protopathic affection that may develop in persons otherwise healthy. In the case cited there had never been any premonitory symptoms.

The author notes two periods in hemicrania: the period of invasion, and the period during which appear, but not always, the following symptoms, enumerated in their order of frequency: lateral or horizontal hemianopsia, scintillating scotomata, migrainous amaurosis, amblyopia, tingling and paretic aching, aphasia, and agraphia. In the same proportion that ocular phenomena disappear, just as a curtain on the stage is drawn apart laterally, tingling and heaviness begin in the fingers, the forearm, the arm, and one-half of the face. These last-named symptoms are usually confined to one upper extremity, but the hemianopsia and scotomata are ordinarily symmetrical. When the tingling begins, the various painful symptoms disappear, and then, if present at all, different forms of aphasia come on, of which the rarest are agraphia and word-blindness. The symptoms of the first period succeed each other singly. This is their special characteristic. After a few moments of apathetic repose, the second period is ushered in by its unique symptom, headache. This pain has a special quality of its own, and can never be confounded by the patient with any other. It is indescribable. Its intensity is in proportion to those of the other symptoms and to the duration of the attack. Cerebral impotence is absolute while it lasts. The periodicity varies. Palombi admits but one cause for hemicrania: heredity. Exciting causes are numerous, of which the principal are atmospheric pressure, cold, constipation, and glaring light. Often the exciting cause is apparently wanting, and the attacks appear spontaneously.

Hemicrania, or migraine, is a vaso motor neurosis. Hypothetically, it is possible to admit a capillary apoplexy as the anatomical basis of the disorder. As preventive measures, the Italian observer finds quinine and bromides of value; and advises antifebrin during the attacks. To sum up: Hemicrania is a distinct neurosis, of which the pathogenesis and anatomical seat are unknown; it has characteristic clinical features that establish its identity, and it is analogous to hysteria and epilepsy, though it presents no traits in common with them other than heredity.

Concerning remedies, Hirt speaks of citrate of caffeine, two grains three times a day, for those cases in which the conditions of the circulation (increased tension, vasodilatation) give no suggestion. Efforts must be directed toward building up the general health by cold-water treatment, general faradization according to Beard and Rockwell's method, franklinization with the Holtz machine, and systematic gymnastic exercise at home. Sometimes lasting advantage has been obtained by change of climate, travelling, and by a stay at the mountains or seaside. Gray recommends twenty or thirty grains of bromide during the attack, and cannabis indica at other times. For anæmia, peptonate of iron in three grain doses, three times daily, is to be given when the condition is not specially marked; when pronounced general physical depression exists, quinine is to be added. In some cases of anæmia in which there are hepatic symptoms a sixtieth to a thirty-second of a grain of bichloride three times a day should be added to the iron, or the iron and quinine. Dana considers bromide of potassium, nitro-glycerin, cannabis indica, and arsenic the best remedies for continued internal use. Cannabis indica, either with or without arsenic, is the most trustworthy, and the bromides the least to be depended upon. To relieve the attacks, salicylate of soda, caffeine, antipyrine, powdered guarana, menthol, muriate of ammonia, and bromide of potassium are reliable remedies for a time, but lose their effect as do almost all other drugs. Rest is the most important element in the management of an attack, rest and perfect seclusion from the world and affairs.

Naming Streets after Medical Men.—The Parisian Municipal Council has named three streets in that city after Charcot, Trélat, and Trousseau.

News of the Week.

French Association for the Advancement of Science.—The twenty-third annual meeting of this association was held at Caen during the week commencing August 9th, under the presidency of Professor Mascart. Among the papers read in the Section of Natural and Medical Sciences was a report by Dr. Le Genole "On the Dangers of Athletic Sports in the Case of Children." Dr. F. Regnault contributed a paper "On the Causes of the Attitude Assumed by Women during Parturition;" Dr. Cartaz one "On a Special Variety of Stenosis of the Œsophagus;" Dr. Galliard one "On the Treatment of Certain Non-syphilitic Headaches by Calomel;" and Dr. Raphael Dubois one "On the Mechanism of Sleep."

Professor Billroth's Widow has been granted a yearly pension of 2,000 florins. The law allows a pension of 600 florins only to the widows of professors, and the grant of a larger sum is a mark of especial favor from the Emperor of Austria.

The British Medical Association will hold its next annual meeting in London. Dr. J. Russell Reynolds is the President-elect, and Sir William Priestly will be Chairman of the Reception Committee. The last meeting of the Association in London was in 1873, under the presidency of Sir William Fergusson.

The Tailors of Gratz not long since presented a petition to the Rector Magnificus of the University, praying that in future no student receive his doctorate diploma until he has furnished proof that he owes his tailor nothing.

The Shah of Persia, who sent for Dr. Galezowski, of Paris, to examine his eyes, has been found to have no organic disease. His general health was poor and the ocular trouble was purely functional.

The German Public Health Association will hold its nineteenth annual meeting in Magdeburg, on September 19–22, 1894. The managers of the Association have been subjected to some adverse criticism for calling a meeting so soon after the International Congress of Hygiene and Demography in Buda-Pesth, especially as many of the subjects to be discussed are the same as those to come before the congress.

Dr. Daniel Cornelius Danielssen died recently at Bergen, Norway, at the age of seventy-nine years. He was well known as an authority on leprosy, to the study of which disease he had devoted his entire life. The work which gained for him his reputation was written conjointly with W. Boeck, and contained the result of an investigation undertaken at the instance of the Norwegian Government. It was published in 1847. It was those observers who established the identity of leprosy, as seen in Norway, with elephantiasis Græcorum. Dr. Danielssen was born in Christiania, and at the time of his death was physician in-chief to the Leper Hospital in Bergen.

Dr. Philip Lonsdale died in Cos Cob, Conn., on August 21st, at the age of seventy-seven years. Dr. Lonsdale entered the United States Navy about fifty years ago, and served as surgeon on Admiral Farragut's flagship Hartford, during the civil war. He was medical director in the navy at the time of his retirement, which took place several years ago.

The American Association for the Advancement of Science will hold its next annual meeting in San Francisco. The officers for the coming year are: *President*, E. W. Morley, of Cleveland, O.; *Secretary*, F. W. Putnam, of Cambridge, Mass.; *General Secretary*, James Lewis Howe, of Louisville, Ky; *Secretary of the Council*, Charles R. Barnes, of Morrison, Wis. The vice-presidents are the chairmen of the various sections.

Typhoid Fever in Montclair.—It has been ascertained that the cause of the recent epidemic of typhoid fever in Montclair, N. J., was due to contaminated wells. Four wells, the water of which was examined and found to contain typhoid bacilli, have been ordered to be closed. The wells are all on Bloomfield Avenue, in the most thickly populated part of the town, and the pumps are of easy access to the public.

The Anatomical Congress will hold its next meeting at Basel, Switzerland, on April, 17, 18, and 19, 1895.

The Bottling of Mineral Waters in France.—The question of the artificial aëration of natural mineral waters was recently up for discussion before the Paris Academy of Medicine. The methods of bottling in use at certain springs were condemned, and the Government was urged to adopt the following precautionary regulations: 1. The sale of mineral waters which have been decanted, or artificially rendered gaseous, shall be prohibited. 2. Every application to the ministry for authorization must be accompanied by the certificate of a competent official that the water has not thus been already manipulated, and by the written promise of the proprietor not to resort to these processes. 3. Reservoirs must be hermetically closed, and should be emptied at least every twenty-four hours. They are to be so placed that the spring flows direct into the reservoir. 4. Bottles must be thoroughly sterilized before being filled, and all causes of pollution during bottling are to be most carefully avoided.

The Prize of the Accademia dei Lincei.—The royal prize of one thousand lire has been divided equally between Professors Tizzoni and Luciani for meritorious work in the fields of pathology and experimental physiology.

The Origin of Typhoid Fever.—Dr. Kenwood read a paper before the Section on Public Health at the Bristol meeting of the British Medical Association, in which he advanced the opinion that typhoid fever might be developed from simple diarrhœa, the specific bacillus springing by a process of evolution from the bacterium coli commune. He believed that dogs might be carriers of the disease, and cited four cases in support of this view. In one case an examination of the stools passed by a dog, prior and subsequent to the appearance of typhoid fever in a household in which there was no other discoverable cause, revealed the presence of typhoid germs.

Science Ignored.—"Whatever water the water-works furnishes has to be taken as it is, and we must trust to God for the rest," is a pious sentiment attributed to the Director of the Department of Public Works of Pittsburgh, who is also quoted as saying: "I don't put much trust in scientists anyway. A theory is nowhere besides practice anyway." The faith, to say nothing of the grammar, of this worthy director must be of a very high

order, such as to move microbes, if not mountains; for a more efficient method of pouring the contagia of typhoid and other water-borne diseases down the throats of the Pittsburghers than that afforded by the city waterworks could hardly be imagined. This is explained very clearly by a diagram published in the August issue of the *Pittsburgh Medical Review*. The water of the Alleghany River, polluted by sewage from the Workhouse and the Alleghany City Poor Farm, and by the surface drainage of the village of Hoboken, is deflected by means of a dam directly into the intake-pipe of the Pittsburgh water-works. Comment is needless.

The Mississippi Valley Medical Association will hold its twentieth annual meeting in Hot Springs, Ark., on November 20–23, 1894. The President of the Association is Dr. Xenophon C. Scott, of Cleveland, and the Secretary, Dr. Frederick C. Woodburn, of Indianapolis.

Dr. Bernhard Grünhut, of this city, was lost at sea from the steamship Bothnia, which arrived last Sunday in Boston from Liverpool. It is not known whether he jumped or accidentally fell overboard. He was a graduate of the College of Physicians and Surgeons, but retired from practice four years ago to devote himself to the real estate business. He was forty-eight years of age.

The Antitoxin Treatment of Diphtheria.—The Board of Health of this city proposes to ask for an appropriation from the Board of Estimate and Apportionment to enable it to manufacture diphtheria antitoxin in large quantities. Dr. Biggs, the bacteriologist of the department, has recently returned from Berlin, where he went to study the method of manufacture and the results obtained by the use of this remedy. His report is very strongly in favor of the new method, and it is upon the strength of this report that the Board has determined to undertake the production of antitoxin at a cost sufficiently low to bring it within the means of poor people.

A Conflict between State and National Health Authorities.—The Surgeon-General of the Marine Hospital Service ordered that all vessels arriving in New Orleans from Central and South American ports during August and September be detained five days after inspection instead of three days, as has been the rule hitherto. The Louisiana Board of Health regarded the execution of this rule as an unnecessary obstruction to commerce, and an appeal was made to the Secretary of the Treasury to have the order rescinded. The Secretary, however, has refused to interfere.

The Cholera is believed to be decreasing in Europe. No new districts have been invaded during the past week, and the number of new cases in already infected regions is slowly diminishing. It is hoped that, with the advent of cooler weather, the danger of any further spread of the disease will be averted.

Dr. Joseph Bancroft, one of the leading physicians of Brisbane, Queensland, died in that city a few weeks ago at the age of fifty-eight. He was born in Manchester, but had practised in Brisbane for the past thirty years.

Opposition to a Health Officer.—A petition is in circulation in Brooklyn praying for the removal of the Health Commissioner of that city. The opposition to him appears to have been excited by the firm stand which he took relative to quarantine regulations and vaccination during the small-pox alarm last winter and spring.

Dr. Oliver Wendell Holmes passed his eighty-fifth birthday on Wednesday of this week at his summer home at Beverley Farms, Mass. He is in excellent health, walks a mile every pleasant morning, and takes a long drive every afternoon. In an interview in the *Boston Advertiser* the poet said, in reply to the question whether he was writing an autobiography: "I am in the habit of dictating many of my recollections, some of my thoughts and opinions to my secretary, who has in this way accumulated a considerable mass of notes. Many of these will be interesting to my family and intimates, some of them, perhaps, to a wider public if I should see fit to make use of them, or leave them to be made use of by others. It is the one thing a person long past the active period of life can do with ease and pleasure; and in the midst of much that might as well, perhaps, perish with the writer, will, not improbably, be found memoranda deserving of permanent record." Concerning his age he said that the twelfth septennial period had always seemed to him as one of the natural boundaries of life. One who has lived to complete his eighty fifth year has had his full share, even of an old man's allowance. Whatever is granted over that is a prodigal indulgence on the part of nature.

M. Paquelin's name is familiar to medical mankind in connection with his thermo-cautery: he is, perhaps, less known as the possessor of a mental heat-producing apparatus which manifests its working by an occasional outpouring of verse, glowing, as might be expected, with "words that burn." The French journals have recently published a poetic effusion of his in which the origin of percussion is told in classic style as an accidental discovery (Have not most great discoveries in medicine been more or less accidental?) of Bacchus. When Semele was dying, with the future god of wine still in her womb, Vulcan performed Cæsarean section, and delivered the child, whom he incontinently inserted into his father's thigh. Here the lusty youngster kicked about so vigorously that he gave his parent sciatica. On escaping from his prison he was naturally thirsty, and he soon began to suffer from alcoholic tremor. When sitting on his favorite seat, a wine-cask, he was constantly drumming on it with his fingers, and hammering it with his restless feet. The difference of resonance attracted his attention, and he soon learnt

> du son dit aérique
> A discerner le sens de celui dit hydrique;
> Il sut en même temps tracer sur son tonneau
> Exactement la ligne où siégeait le niveau.

Man, we gather, soon learnt by Bacchus's example to diagnose the internal condition of a wine-cask, and Hippocrates by and by bettered the instruction by determining the limits of the spleen by percussion. Is it too much to hope that M. Paquelin's centre of poetic thermogenesis may hold out till he has found a divine origin for auscultation, inspection of the tongue, and the other esoteric mysteries of the medical art?—*British Medical Journal.*

University Reforms in Italy.—The Italian Government proposes to suppress twenty-three universities in the peninsula and to convert them into preparatory schools, creating in place of them large and thoroughly well-appointed state universities in Rome, Naples, and two or three other of the larger cities.

Reviews and Notices of Books.

An American Text-Book of the Diseases of Children. Including Special Chapters on Essential Surgical Subjects: Diseases of the Eye, Ear, Nose, and Throat; Diseases of the Skin; on the Diet, Hygiene, and General Management of Children. By American Teachers. Edited by Louis Starr, M.D. Physician to the Children's Hospital and Consulting Pediatrist to the Maternity Hospital, Philadelphia. Assisted by Thompson S. Westcott, M.D., Attending Physician to the Dispensary for Diseases of Children, Hospital of the University of Pennsylvania, Philadelphia. W. B. Saunders. 1894.

This is a comprehensive treatise on a highly important branch of practical medicine. The treatment of the various subjects by the sixty-three contributors is very uneven, four minor topics being unduly expanded at the expense of more important subjects. Nevertheless the work will be found useful as one of reference for all those interested in pediatrics.

America may well be proud of her recent contributions to the better knowledge of diseases of children, and the work before us fittingly attests the growing significance attached to this branch of general medicine. The illustrations are in the main good, and will be found especially helpful by those who have not made a special study of pædology. The colored plates are, however, exceptionally poor and misleading.

Dermatologische Zeitschrift. Herausgegeben von Dr. O. Lassar; Bd. I., Heft. I. Berlin: Verlag von S. Karger. 1894.

The first number of this new and promising skin journal, contains contributions from the editor, Dr. Lassar, and such other well-known men as Saalfeld, Kromayer, Joseph, Unna, etc. The prospectus for succeeding numbers is so rich in original articles that this department will prove of much interest to dermatologists.

A number of fairly good illustrations are bound in at the end of the volume, making over 120 pages.

Zur Behandlung der Lungentuberculose mittels Koch'scher Injectionen. Von Dr. E. Thorner, Sanitätsrath in Berlin. Berlin: S. Karger. 1894.

This is a brief history and critical study of tuberculin as employed in the treatment of pulmonary tuberculosis. The author regards this substance as a valuable remedy, capable of curing the disease in its early stages, and of bringing about very marked improvement in more advanced cases. "It is," he says, "the most important remedy we have for the treatment of tuberculosis, and it is the duty of every physician, even if not to employ the remedy himself, at least to study impartially the results of its administration."

Biography of Eminent American Physicians and Surgeons. Edited by R. French Stone, M.D., author of "Elements of Modern Medicine," Surgeon-General National Guard State of Indiana, Consulting Physician to Indianapolis City Hospital, etc. Royal 8vo, pp. 751. Indianapolis: Carlan & Hollenbeck. 1894.

This work contains seven hundred and fifty double-columned pages of biography, with photo-engraved portraits of hundreds of medical men. The editor has evidently done his best to give an impartial record of the subjects treated, and due credit must be accorded him for honesty of purpose and purity of motive. It is obviously impossible to make a work of this character beyond criticism. The most difficult of all undertakings is to please every great man who may be entitled to go down in history. Hence it is generally prudent to wait until they are dead and cannot talk back. It is true the world over that "many are called but few are chosen," but the difficulty is in drawing the line between the two. The editor has succeeded fairly well in this line, although a great many of the eminent men are heard of for the first time. Some partiality is shown for immediate neighbors in Indianapolis, but this can be explained naturally by a better knowledge of their merits than those of other eminent men in larger cities. As must inevitably happen in the best regulated family, wondrous distinctions will thrust themselves upon general notice. In New York, Philadelphia, and Chicago, the selections are not such as would be made by one having a large acquaintance with medical men of reputation. Almost as a rule the best men have the shortest notices and the fewest pictures, but they have themselves to blame in not furnishing the necessary data. The accounts of distinguished deceased members of the profession are singularly good, and add important and interesting chapters to the history of medical achievements in America. The photo-engravures are not well printed, although the plates have evidently been carefully made. The book will be interesting to a wide circle of curious readers, but best of all, will furnish valuable and trustworthy data for obituary notices.

The Etiology of Osseous Deformities of the Head, Face, Jaws, and Teeth. By Eugene S. Talbot, M.D., D.D.S., Professor Dental Surgery Woman's Medical College; Lecturer on Dental Surgery and Pathology, Rush Medical College, Chicago, etc. Third Edition. 8vo, pp. 484. Chicago: The W. T. Keener Co. 1894.

The third edition of this interesting work represents a revision and enlargement of the previous ones, and is in so much an improvement of them. The new field of inquiry, as to the relation of deformities of head, face, jaws, and teeth, to those of other forms of the degenerate type, is discussed with singular clearness, with a painstaking examination of scientific data, and with the result of formulating very instructive, interesting, and valuable data for the prosecution of this important department of anthropology. It is thus shown that the variations from the normal type of cranial, facial, and maxillary developments are in keeping with those associated with asymmetry in other organs, and for the most part are dependent upon the like causes of hereditary taint, racial peculiarities, climate, and environment. The subject—from the focal point of interest, the mouth—compasses a wide range of collateral observations, proving a remarkable and instructive association of these forms of defective development with those of the brain, the nervous centres, the bones, and incidentally with the character, temperament, and hereditary proclivities of the individual. The illustrations, over four hundred in number, are mostly original and represent in an excellent and striking manner the leading types discussed. The work as a whole is carefully done, is thoroughly scientific in tone, and adds some very important and original data to the literature of an intensely interesting study.

Prompt Aid to the Injured. A Manual of Instruction designed for Military and Civil Use. By Alva H. Doty, M.D., Major and Surgeon of Ninth Regiment, N.G.S.N.Y. Second Edition. 12mo, pp. 304. New York: D. Appleton & Co. 1894.

The second edition of this useful manual has been enlarged by a practical chapter on hygiene, and the addition of the recently adopted drill regulations for the Ambulance Corps of the United States Army. All the subjects are treated in a thoroughly practical manner, and the book will prove indispensable to all who follow camp life.

Jahresberichte über die Fortschritte der Anatomie und Physiologie. XX. Band, Literatem, 1891. II. Abtheilung. Physiologie mit General-Register zu Band XI.–XX. Leipzig: Verlag von F. C. W. Vogel. 1893.

With the present volume and its very complete index, this valuable publication ceases to appear.

Department of the Interior, Census Office. — Vital Statistics of New York and Brooklyn, Covering the Period of Six Years ending May 30, 1890. By John S. Billings, Surgeon United States Army, Expert Special Agent. Quarto, pp. 529. Washington, D. C. 1894.

This exhaustive report presents a number of interesting features which are quite novel in the line of census work, notably such as the subdivision of the city into sanitary districts, and the analyzation of the immediate surroundings of stated conditions upon the death rates of different races and classes of people. The influence of heredity, as derived from the mother is also shown. Aside from an almost bewildering array of figures, their analysis as bearing upon the conditions and influences named, a number of finely executed full-paged maps of New York and Brooklyn, are given, with the subdivision of sanitary districts proportionately shaded to illustrate the different degrees of death-rate from different diseases, accidents, suicides, etc. Age appears to be one of the most important factors. Deaths of the very young and very old take the lead. Of the male population in both cities over fifteen, over one-half are married. The death-rate was greatest in the widowed and least among the single. The death-rate of consumption was nearly equal in both sexes, being most fatal among the accountants and clerks, dressmakers and seamstresses, while suicide was most frequent among the school teachers in New York. Statistics are also presented of all other diseases in their varied and complex relations, affording an amount of instructive and valuable information which reflects the highest credit upon the minute and painstaking methods of the talented and accomplished compiler. The work can be studied with the greatest profit by the sanitarian and economist.

Hydatid Disease, Vol. II. By the late John Davies Thomas, M.D. (London), F.R.C.S. Eng., etc. Edited by Alfred Austin Lendon, M.D. (London), Lecturer on Forensic Medical and Clinical Medicine, University of Adelaide. 8vo, pp. 166. London: Baillière, Tindall & Cox. 1894.

This volume consists of a collection of papers on hydatid disease by the late Dr. Thomas, and presents a well-arranged account of the affection as related to the abdominal organs, thoracic viscera, nervous system, bones, muscles, etc. The clinical phenomena are also clearly presented, and the treatment by operative procedure is clearly detailed. The first volume of the series was the introductory one by the editor, while the present one contains wholly the views of Dr. Thomas.

Transactions of the Fifteenth Annual Meeting of the American Laryngological Association, held in New York, May, 1893. 8vo, pp. 165. New York: D. Appleton & Co. 1894.

This volume contains much that is interesting to the laryngologists. The papers of Dr. Delavan on neglect in reporting cancer operations, of Dr. Lefferts on intubation in the adult, of Dr. Lincoln on recurrence at a new site of a laryngeal growth, and of Dr. Jonathan Wright on the structure of œdematous nasal polypi, are worthy of special note.

Manual of Practical Anatomy, in Two Volumes. By D. J. Cunningham, M.D., Professor of Anatomy, University of Dublin. Edinburgh and London: Young J. Pentland. 12mo, pp. 647. Philadelphia: J. B. Lippincott.

This is a well-arranged, carefully written, and well illustrated work on practical anatomy. The author proves himself to be a good teacher in his very natural method, and in the thorough appreciation of the wants of the student. In many parts of the work will be found most valuable suggestions for an easier and more direct manner of study than is usual with works of its kind. Much attention is deservedly given to topographical anatomy, particularly as applied to the abdominal organs. Many of the illustrations are entirely new, while all are good and to the point. It is exceedingly difficult to give anything strikingly new in a dissection manual, but the author has done a good part in infusing an individuality in the work which will commend itself to the reader.

Braithwaite's Retrospect, Vol. CIX., January to June, 1894.

This well-known volume contains the usual amount of valuable selections for reference which have given it such a well-deserved reputation among students and practitioners.

A Retrospect of Surgery, January, 1890, to January 1894. Prepared by Francis J. Shepherd, M.D., C.M., Surgeon to the Montreal General Hospital. 8vo, pp. 259. Montreal.

This is a little book of abstracts of the progress of surgery, reprinted from the *Montreal Medical Journal*, and contains a fair selection of the notable things done in that line during the past four years.

Die neuesten Untersuchungen über die Pathologische Anatomie und Physiologie der Tabes Dorsalis. Zwei Vorträge, von E. Leyden. Berlin. 1894.

This is a small monograph written to show that the author, first and many years ago, demonstrated the initial lesion of tabes to be in the posterior spinal roots. This is getting to be the modern view, but it is not yet entirely proven to be the true one.

Lehrbuch der Nervenkrankheiten für Aerzte und Studirende, von Professor Dr. H. Oppenheim, mit 220 Abbildungen. Pp. 870. Berlin: Verlag von S. Karger. 1894.

The reputation of Professor Oppenheim as a careful observer and writer, and his long experience in Charité wards and the clinics of Berlin, lead one to expect a valuable treatise from him. There are a good many treatises on nervous diseases now, each having some special merits. Perhaps the special merit of Oppenheim's is the care and detail which are given to the interesting but relatively rare diseases. Thus syringomyelia gets nearly as much space as cerebral hemorrhage. Brain parasites and sinus thrombosis get more than myelitis. The chapters on cerebral syphilis and locomotor ataxia are particularly good.

Turning to the practical side, we find absolutely no new suggestions or helpful advice. For epilepsy, neuralgia, tabes, etc., the same list of drugs, the same advice about diet, baths, and potash is given. The author shows himself keenly alert to every clinical phenomenon or pathological process, but he does not take a human and curative interest. This is the Teutonic way, and Americans who do like to help their patients as well as to make a local and pathological diagnosis, are accused of being shallow and credulous. Despite of our criticism in this respect, however, we do not hesitate to say that Oppenheim's work is the most systematic treatise which any German has written since the ancient days of Romberg. It is well and copiously illustrated.

Les Nouvelles Idées sur la Structure du Système nerveux chez l'Homme et chez les Vertébrés. Par le Dr. S. R. Cajal. Edition française revue et augmentée par l'auteur. Traduite de l'espagnol par le Dr. L. Azoulay, Préface de M. Mathias Duval. Avec 49 figures dans le texte. Small 8vo. Pp. 200. Paris: C. Reinwald et Cie. 1894.

Professor Cajal's name is identified with some of the most important of the recent advances in the anatomy of the nervous system obtained by the application of metallic stains. Cajal himself is one of the very few modern Spaniards who have obtained an international reputation. No one could better present the new ideas of the structure of the nervous system, and the present work fulfils its purpose admirably, being clear and explicit without being cumbersome. The author adds descriptions of various new methods of staining.

Society Reports.

THE BRITISH MEDICAL ASSOCIATION.

Sixty-second Annual Meeting, held at Bristol, July 31 to August 4, 1894.

Special Report for the MEDICAL RECORD.

(Continued from page 251.)

SECTION OF OBSTETRIC MEDICINE AND GYNECOLOGY.

FIRST DAY, WEDNESDAY, AUGUST 1ST.

DR. J. G. SWAYNE, the President, delivered a short introductory address. He reviewed, historically, previous meetings of the Association at Bristol, and referred to his address in 1883, when he insisted on the importance of midwifery, and that it should stand next to medicine and surgery, and not be considered a specialty. Since then a new race of gynecologists and abdominal operators had sprung up.

He drew attention to the fact that medicine and surgery formed the subject of an address each year, but that obstetric medicine only occasionally did so, and thought that that was wrong.

Induced Labor in the Absence of Dystocia.—DR. ROBERT BARNES, of London, opened a discussion on "The Necessity of Inducing Labor in Certain Conditions of the Mothers not Obstructing Delivery." He said that as medical science advanced this was a matter which needed revision. We should study the methods of nature in adopting this means of relief; the safety of the mother should be our first consideration, and of the child the second, but frequently the two conditions ran together.

The duty of the physician when the pregnant woman was in difficulty was to consider the means of safety for both mother and child, and no problem in medicine was more difficult.

The most remarkable phenomena of pregnancy were increase in the excitability of the nervous system and increase in the blood and in the blood-pressure. We must recognize that the struggle between pregnancy and the coexisting disease was strictly physiological.

We must keep a strict watch over each organ, but be careful not to press expectant treatment too far. Several of the conditions were those which attended excessive nerve tension, and were of a convulsive character, of these the first one was vomiting; this was like other convulsive attacks and tended to be rendered chronic, each attack helping to graft a habit of vomiting.

Vomiting, in his experience, was most severe in cases where there was nerve shock or depression; rapid disintegration of tissue followed persistent vomiting, and this tended to cause a condition of toxæmia, ending in coma and death. Vomiting may throw excessive strain on the brain and cause cerebral hemorrhage. When rapid emaciation with toxæmic symptoms occurs, the induction of labor may prove too late. In cases in which the vomiting is due to excessive distention of the uterus, labor should be induced early.

Tetanus was a strong indication for the induction of labor. In chorea he thought that pregnancy should be terminated, and, as a general rule, one should not allow pregnancy in any convulsive disorder to continue. In insanity he would induce labor, though Dr. Savage was of a different opinion.

Vascular disorders, the excessive blood-pressure found in pregnancy, was sometimes relieved by external hemorrhage as epistaxis, by serous effusion, or by vomiting, throwing off some fluid, or by dropsical effusion, or might result in cerebral hemorrhage. For the excessive blood-pressure we should purge, and in some cases venesection was strongly indicated, and, as a last resource, we might induce labor.

Extreme anæmia might render induction necessary, or it might be required when valvular disease of the heart or aneurism was present. We should carefully watch these cases and induce labor when distress supervened. He believed that pregnancy aggravated phthisis, but the question of inducing labor was a difficult one. When tumors coexisted, as a general rule it was safer to let pregnancy go on. Repeated labors with a dead child suggested the bringing on of labor in a succeeding one before death occurred, and he believed that carrying a dead child was injurious to a woman. In scarlet fever he would induce labor if albuminuria were present.

In conclusion, he would urge the rule laid down by Denman, never to perform the operation without a consultation beforehand.

THE PRESIDENT said that in an experience of fifty-two years he had induced labor 37 times; in 24 of these cases it was done for contracted pelvis. In the remaining 13, 5 times for persistent vomiting, 3 for anasarca and albuminuria, 2 for hydramnios, 1 for vaginal hemorrhage, 1 for severe irritability of bladder, 1 for diseased placenta.

DR. MORE MADDEN, of Dublin, said that where the child had died in previous pregnancies he would induce labor as early as the sixth month, and he believed that at that time the child would be viable. As regards method, he preferred that of dilating the cervix by the finger.

DR. MURPHY, of Sunderland, thought the most frequent of the cases under discussion were those of grave albuminuria. As regards method, where no hurry, he would rupture the membranes; where rapid delivery was required, he would use Barnes's bags. Where the bag could not be introduced he would start with a tent.

DR. MURDOCH CAMERON, of Glasgow, would take exception to the induction of labor in fevers. With respect to uterine tumors he would not be inclined to interfere, unless the tumor were likely to obstruct labor. You may remove the tumor without interfering with the pregnancy. He did not think the child was viable before the seventh month, and the nearer the eighth month the labor was induced, the better. In ascites it was sometimes necessary to induce labor. In hemorrhage and eclampsia he had no hesitation in inducing it, although some were still disinclined to induce it in eclampsia. He thought some cases of violent vomiting were lost by delay.

DR. HEYWOOD SMITH, of London, would not induce labor in cases of fibroid tumor.

MR. J. W. TAYLOR, of Birmingham, called attention to cases of dropsy and albuminuria before the child was viable, and thought that these were the cases in which it was most desirable to have some settled rule laid down.

DR. MASSEY, of Bournemouth, related a case of severe dropsy in which he had induced labor by passing a catheter between the membranes and uterine wall with good result.

DR. BYERS, of Belfast, agreed in inducing labor in cases of vomiting which persisted in spite of treatment, but thought that all were not agreed that, given albuminuria in pregnancy, induction of labor should be decided upon.

He related three cases of primiparæ all with albuminuria and dropsy: 1. Dead fœtus, no interference, good recovery; he did not interfere because the fœtus was dead and there was no high-tension pulse. 2. Primipara, sixth month, one-fourth col. albumin, no high-tension pulse, no marked œdema; treated by warm baths and milk diet; living child at term; good recovery. 3. Much headache, high-tension pulse, labor induced.

Cases like the third were more troublesome because eclampsia was likely to follow. Recently Smyly, at the Rotunda, had found that in a large number of cases of eclampsia equally good results were obtained by leaving pregnancy alone and injecting morphia hypodermically.

DR. WRIGHT, of Leeds, had in one case been obliged to induce labor for severe ptyalism. In ovarian tumors would remove tumor and leave pregnancy. Would use solid bougie instead of catheter.

Dr. Aust Lawrence, of Bristol, urged necessity of first inquiring if vomiting were due to any other cause; had seen cases in which it was due to acute yellow atrophy of liver. Urged importance of giving a good trial of other treatment, especially of moral suasion; would be very chary of inducing labor in fever.

Dr. Tweedy, of Dublin, said that in the Rotunda Hospital the induction of labor was looked upon as a dangerous proceeding only to be resorted to in extreme cases, and it was seldom done except for contracted pelvis.

Recently a woman was admitted with fibroid tumors at the seventh month; a Porro's operation was done at term. He believed that in only two per cent. of cases of albuminuria did eclampsia follow, and they did not induce labor at the Rotunda in cases of eclampsia in pregnancy, but treated the condition by hypodermic injection of morphia, one-half grain every half-hour, with very good results.

He had never seen a case of death from vomiting in pregnancy. In ovarian tumor in pregnancy he would open abdomen and remove tumors.

Dr. M. A. Scharlieb, of London, had twice done ovariotomy in pregnancy with good results.

Dr. Boxall, of London, had induced labor in one case, because of varicose veins in vulva which threatened to burst. Would be very diffident in interfering in cases where fibroid tumor complicated pregnancy.

Dr. Pearse, of Southsea, thought that a mistake was often made in waiting for a viable child, and that the condition of the mother should alone decide the necessity.

Dr. Barnes, in reply, said that he had seen cases of vomiting prove fatal. As regarded method, preferred bougie to catheter. He did not think digital dilatation desirable. There was no class of cases in which the induction of labor was always necessary, and he did not advocate it in all cases of albuminuria. In convulsions, he thought inhalation of nitrite of amyl the best treatment. He would retract now an opinion he expressed years ago, and would say that when there was ovarian tumor and pregnancy, you should remove the tumor and not the pregnancy.

Uterine Fibroids.—Dr. M. A. Scharlieb, of London, then read a paper on "The Treatment of Uterine Myomata." She gave an account of the operative proceedings in nineteen cases. In six she removed the appendages, and all recovered. In thirteen she removed uterine tumor and appendages, and two proved fatal. In one she removed tumor only. In the first six cases she removed the tubes as close to the cornua as she could.

In the cases of hysterectomy she first ligated the broad ligaments outside the appendages, then ligated the uterine artery. She made flaps of the peritoneum on anterior and posterior surfaces of uterus, and she carefully disinfected the cervix with pure phenol. She closed the abdominal wall with three separate layers of stitches. In four she used a temporary elastic ligature, and in all these she drained. In the remainder she tied all bleeding points and did not drain.

The lessons she drew were: First, the importance of thorough surgical cleanliness.

In her cases the patient had repeated hot baths first, then the skin was disinfected by washing with soap and water, alcohol, solution of permanganate of potash, followed by oxalic acid. Then 1 to 2,000 corrosive sublimate, and lastly a carbolic compress was left on for twenty-four hours. The clothes worn by the patient were also sterilized. The operator and assistants cleansed their arms and hands in the same way as the patient's abdomen was done, and wore sterilized linen overalls. The instruments were boiled and laid in 1 to 20 carbolic, which was diluted with boiling water at the time of operation, and they were put down during operation in a shallow dish containing carbolic. The sponges were cleansed with sulphurous acid and kept in carbolic.

The second lesson to be learnt was the importance of handling the peritoneum as little as possible; she did not believe in sponging or mopping the peritoneum, and thought that doing so encouraged hemorrhage. She avoided the temporary elastic ligature as much as possible, because she thought that there was more oozing afterward. She avoided drainage as much as possible.

The third lesson was to tie the arteries, both uterine and ovarian, carefully; and the fourth, to treat the stump intra peritoneally.

In all cases there was no sepsis, and the two which proved fatal died from shock. She did not leave a ligature on the stump; because it caused death of tissue. She drew attention to the fact that only one of the cases was the mother of children, the remainder being unmarried or sterile.

Resection of the Uterus.—Dr. J. Stuart Nairne read a paper on "Resection of the Uterus for Fibroid Tumors and other Diseases." He pointed out that removing the appendages did not always restore to health, that enucleation of the tumor per vaginam or by abdominal incision was dangerous and the results not always satisfactory. He would propose what he called resection, namely, to split the uterus, remove the tumor, and stitch the remains of the uterus together, tying the vessels as he met with them. He had treated three cases in that way, they had recovered and one had since had a child.

Extirpation of the Uterus for Myomata.—Dr. Smyly, of Dublin, read a paper on "Total Extirpation of the Myomatous Uterus." He said that the treatment of uterine myoma was still one of the burning questions of the day, but that he in this paper would deal only with the last resource of surgery. He would advise, however, that those who were beginning to do hysterectomy should adopt the extra peritoneal treatment of the pedicle; this was the only method he adopted up to 1892, since then he had only done one case in that way. What he did now was to perform total extirpation in one of three ways: By abdominal section, per vaginam, by a combination of the two, or the "mixed method." The dangers of hysterectomy depended on the stump, and by adopting this method these dangers were removed. He had done fifteen cases with two deaths. By the mixed method, eleven cases with one death. By the abdominal method, two cases with one death. By the vaginal method, one case, no death. Some very large tumors among them. One where the uterus was as large as a full-term pregnancy and contained several myomata was removed in this way. He opened the abdomen, ligatured the broad ligaments, then divided the pouch of Douglas, and lastly separated uterus from bladder.

In small tumors he had removed the uterus per vaginam by morcellement, and in one case the fragments weighed two and a half pounds; for two days beforehand the vagina was packed with antiseptic gauze, patient was placed in lithotomy position, and cervix drawn down and separated from bladder. Pouch of Douglas then opened and cervix cut away, and then uterus attacked.

Dr. Heywood Smith, of London, congratulated Mrs. Scharlieb on her success; he thought that soon all cases would be treated by the intra peritoneal method or by complete extirpation. Vaginal hysterectomy showed a less mortality than any other method, but the best way of dealing with these tumors was not yet determined.

Dr. Rabagliati, of Bradford, related a case in which a large fibroid disappeared after pregnancy, and thought that now too much attention was directed to surgical treatment, and too little to dietetic and medicinal.

Dr. Cullingworth, of London, drew attention to the extreme care which Mrs. Scharlieb paid to the prevention of sepsis, and said that the method resembled that adopted in the Johns Hopkins University Hospital, as published by Dr. Howard Kelly; and the same precautions had been adopted in a maternity at Clapham, carried on by ladies, with excellent results. He complained that there were not sufficient statistics at present to enable one to decide whether hysterectomy was justifiable or not, and that what we really want is an authentic history of a number of cases not treated surgically; opera-

tions were more frequent now because we know that these tumors sometimes kill, but many disappear without operation.

Dr. Travers, of London, thought that cases after hysterectomy were never so well able to work for their living as after other abdominal operations.

Dr. Aust Lawrence, of Bristol, thought that the station of life of the patient often determined the treatment. Thus hysterectomy was required in the poor woman, whereas a well to do one who could lay up might avoid the operation.

Dr. Barnes, of London, would like an authoritative opinion as to whether a fibroid tumor ever killed, as it had recently been stated by a prominent London physician that they never did so.

Mrs. Scharlieb, in reply, said that one seldom found the appendages healthy in cases of myoma; in nearly all her cases the ovaries were enlarged and cystic. The question of removal of the appendages of the tumor depended on the nature of the growth. Thus in large, smooth, uninodular tumors removing the appendages did not check the growth; also multinodular tumors, when of large size, needed the major operation, though in two or three of her cases the electrical treatment had been used and had proved futile. She thought that there was no doubt that fibroids did sometimes kill by the hemorrhage and pain, or by pressure on the ureters. Her patients had been able to return to hard work after the operation, and no hernia had resulted in any of her cases.

Second Day, Thursday, August 2d.

Hemorrhage in Late Pregnancy.—Dr. Smyly, of Dublin, opened a discussion on "The Treatment of Hemorrhage during the last Two Months of Pregnancy." He said that in the great majority of cases this was due to separation of the placenta; the uterus was divided into two distinct portions, and this difference which existed in pregnancy was most apparent after parturition. The upper thick portion received its blood-supply directly from the uterine and ovarian arteries, and the lower thinned portion, to which the blood vessels passed, from the upper segment. The limiting line was called the retraction ring; the placenta was sometimes situated in the lower segment, but wherever its situation premature separation of it caused hemorrhage. It was not possible always to draw a line between accidental and unavoidable hemorrhage.

Placenta prævia occurred in women who had borne several children rapidly, also in connection with an enlarged and diseased uterus. The placenta was seldom normal in these cases. It was thinned. There were often spaces in which its tissue was deficient, and placenta succenturiata occurred. He thought that an abnormally low attachment of the placenta might be attributed to four causes: 1. When there was a very large placenta which could not find room in the uterus. 2. When the uterine walls were concave inward, instead of convex, as they should be, and there was an actual instead of a potential cavity. 3. The stretching of the cilia in endometritis. 4. The placenta being developed from decidua reflexa.

The diagnosis was made from the hemorrhage and from feeling the placenta. He did not believe that auscultation was of any value for diagnostic purposes. The hemorrhage before labor may be due to a disproportion between the placenta and the area of its site. Hemorrhage during labor was due to the distention of the lower uterine segment, and its being drawn up by the action of the longitudinal fibres, and the detachment of the placenta may cease with the rupture of the membranes.

Treatment.—In almost all cases the os will admit two fingers; if so, bring down a leg and then leave the case to nature. If further hemorrhage occurs, gentle pulling on the leg will arrest it. There were two conditions in which this treatment was inapplicable: 1. When the os would not admit the finger; in these he would plug the vagina. 2. When the labor was advanced and turning impossible. In these he would rupture the membranes. He did not recommend any other methods, and disapproved of accouchement forcé and separation of the placenta by the finger. The method which was common was bad, viz., to plug the vagina until the whole hand could be introduced, and then to do internal version. This was attended by many dangers, among which he would mention sepsis, entrance of air into veins causing sudden death, and laceration of the cervix.

The mortality of the method he had described had been seven per cent. Of twenty cases lately treated two had died.

Accidental Hemorrhage.—He did not think that an accident would cause separation of a healthy placenta. The commonest cause of this condition was disease of the endometrium, and this was frequently asscciated with syphilis and renal disease. The blood vessels were diseased and caused hemorrhage, and this went on if the blood had not free escape until the pressure to which it was subjected equalled the blood-pressure in the maternal vessels. He thought that concealed accidental hemorrhage was due to some disease of the uterine wall, which rendered it unable to resist the pressure of the effused blood, and on that account he looked upon it as dangerous because it always betokened a diseased atonic uterus.

Treatment.—It was impossible to lay down a routine treatment, and he thought that the importance of rupturing the membranes had been overestimated, and this was only useful when labor was somewhat advanced. Some cases required nothing to be done. When the os was small he thought that rupturing was bad, as it reduced the pressure in the uterus and so favored further hemorrhage. It does not always induce pains, and so blood flowed into the partially emptied uterus. It is better in severe cases to combat shock, and where blood is escaping from the uterus to use vaginal douches of hot water, followed by a vaginal tampon. He did not think that the tampon favored concealed hemorrhage. After rupturing the membranes he would never use tampons. In very bad cases he believed that Porro's operation would be better than accouchement forcé.

He epitomized his treatment thus: When os small, preserve membranes; when hemorrhage appeared externally, plug; when labor advanced, rupture membranes and deliver by the best method possible.

Dr. Robert Barnes, of London, believed that disease of the uterus was the most common cause of hemorrhages; but that disease of the placenta was also a cause. In placenta prævia he would not use accouchement forcé. He described the retraction ring long before Bandl. He looked upon placenta prævia as resembling ectopic gestation, in that the placenta was fixed to a part which was not adapted to receive it. When the os was small he used his own bags. He always preferred forceps to version, where possible, as it gave a better chance to the child. He did not like the use of the vaginal plug.

Dr. Byers, of Belfast, had met with cases of placenta prævia in which the os would not admit the fingers, and in three such cases he had tried De Ribes's bag with good results. After introducing the bag, if labor did not come on, he had found that gently pulling on the bag would hasten it, and would arrest any hemorrhage. He had found that he could introduce De Ribes's bag when the os was the size of a shilling. In accidental hemorrhage rupture of the membranes only did harm when pains did not quickly follow.

Dr. More Madden, of Dublin, was opposed to a good deal that Dr. Smyly had said, and he advocated accouchement forcé and the vaginal plug; for the latter purpose he used a clean sponge soaked in terebene. After sufficient dilatation had been obtained he performed internal version, never using bipolar method. In accidental hemorrhage he saw no objection to rupturing the membranes.

Dr. Murphy, of Sunderland, said that we should rec-

ognize the danger of placenta prævia, and if the seventh month had passed take the case in hand at once. He had always found in cases of placenta prævia that the finger could be introduced into the cervix. He then separated the placenta for a short distance around the os and put in a Barnes bag, and as soon as sufficient dilatation had been obtained he delivered. He thought that the place to put in a plug was the cervix, and not the vagina.

Dr. Murdock Cameron, of Glasgow, entirely disapproved of Porro's operation in any case of accidental hemorrhage. He advocated the vaginal plug. He had never seen a case of concealed accidental hemorrhage. When the placenta was central he always pushed his fingers straight through its substance.

Dr. Scharlieb, of London, believed in plugging with iodoform gauze.

Dr. Robert Boxall, of London, had investigated the point on the membranes which presented over the os by touching it with eosine at an early stage of labor, and locating the stained spot afterward. He found that in many of these cases the placenta must have encroached on the dangerous zone, though there were no symptoms of placenta prævia, and the latter was especially the case when the membranes ruptured early. In some cases external version was possible. He drew attention to the fact that an accident was sometimes the cause of hemorrhage in placenta prævia marginalis. He had examined a large number of placentæ, and in several cases had found evidence of hemorrhage having occurred a month or two previously, when there had been no symptoms. He impressed the necessity of inducing labor when hemorrhage had once occurred. In cases where there was no dilatation of the os, the hot douche proved useful. In some cases he plugged the vagina, using wool soaked in sublimate solution. He had seen cases in which the placenta covered the greater part of the interior of the uterus.

Dr. Aust Lawrence, of Bristol, said that when the cervix would not admit the finger he was in the habit of plugging the cervix with iodoform gauze. He thought cases in which there were repeated small bleedings were more dangerous than those in which the hemorrhage was at once alarming. He would never leave the woman until labor was finished when once bleeding had set in.

Vaginal Hysterectomy for Cancer of the Uterus.—Mr. F. B. Jessett, of London, then read a paper entitled, "On Thirty Cases of Vaginal Hysterectomy for Carcinoma Uteri, with Two Deaths." He said that vaginal hysterectomy was now a well-recognized operation, and was done in three ways: 1, using ligatures; 2, using clamp; 3, combined abdominal and vaginal method. He laid great stress on the importance of suitable preparation of the patient beforehand. He would have her kept in bed three or four days, and syringe vagina frequently. He dusted iodoform of cervix through a Ferguson speculum, especially if there was ulceration. The diet should be light.

Details of Operation.—Patient in lithotomy position, using Clover's coutell. Two Sims specula were passed, one in front and one behind. A sharp hook seized the anterior lip of cervix and pulled it down, and cervix was seized by two vulsella. A sound was passed into the bladder to determine its limits. Strong scissors then divided the mucous membrane around the os. The bladder and ureters were separated by the fingers, special care being taken to free thoroughly at the sides. The utero-vesical fold of peritoneum was opened. Then Douglas's pouch was opened and the fore-finger of the left hand passed behind and the thumb in front of the broad ligament, and the uterine artery on each side recognized. A special strong curved needle was passed up at the front of the broad ligament and pushed through above where the uterine artery was felt, threaded, and withdrawn, and ligature tied. A pair of pressure forceps was applied between the uterus and the ligature and the broad ligament divided with scissors. The fundus was anteverted or retroverted so as to bring the ovaries into view, and the remainder of the broad ligament transfixed and tied in two sections, the ends of the ligatures being left long and brought down through the vagina. The anterior and posterior peritoneal flaps were seized with catch-forceps and brought down. A glass drainage-tube was passed into the peritoneal cavity and the vagina plugged. The plugs being removed on the second day.

In two cases the uterus was so large that it could not be removed through the vagina entire. In these cases it had been advised to divide the uterus in half, but he preferred to treat them by the combined method. The patient being in the same position, the operator stands between her legs to make the abdominal incision. The uterus was then drawn up and the broad ligaments tied.

As to the question of clamp and ligature, he preferred ligature, but he thought that in cases where the patient was very exhausted the clamp might be used, as it took a shorter time. He had invented a special clamp for the purpose.

Apex Treatment.—If prolapse of omentum or intestine occurred, he used the speculum; packed the vagina daily, and used douching. He had the bowels open on the third day. He found it necessary to tie a catheter in the bladder for at least two days.

As regards the results, cases only were fit for this operation in which the disease was limited to the uterus, and the latter was freely movable.

The advantages of the clamp were that the operation was more rapid. Its disadvantages were that the end projected into the peritoneal cavity and might convey septic matter. That it inevitably led to necrosis of the tissues it grasped. That intestinal obstruction was more frequent after its use, and that the ureters might be caught between its blades. Also, that the weight and discomfort to the patient occasioned by its use were considerable.

As regards silk and catgut for ligatures, he preferred silk for the uterine artery, but for the remainder of the broad ligament catgut might be used. He did not stitch the peritoneal flaps, but drew them down into the vagina and carefully packed around them.

As regards drainage, he thought that if there was much oozing it was safer to use a glass drainage-tube. If gauze were used, the omentum might be entangled in it and drawn out. Flushing the peritoneum was useful.

The dangers of the operation were sepsis, hemorrhage, and injury to ureters. This might be avoided by being careful to thoroughly separate bladder, and by taking care to pass the needle from before backward. Vesico vaginal fistula might result, or recto-vaginal fistula in virginal narrow vaginæ. In cases of cauliflower growth he would remove the growth before doing hysterectomy. He did not think it necessary to remove the ovaries and tubes.

Dr. Smyly, of Dublin, had sometimes had occasion to regret having performed the operation when the disease had been too extensive. The principal guides as to the amount of extension of the growth were that the uterus should be mobile and the broad ligaments not invaded by the growth, as shown by examination per rectum. He preferred the method of Dr. Doyen, of Rheims. Both flushing and suturing of the peritoneum were usually unnecessary.

Dr. Heywood Smith, of London, drew attention to the danger of inverting the uterus when the disease was in the cervix, as being likely to infect the peritoneum; and said that ligature was almost impossible when the vagina was narrow. He would use the catheter as little as possible.

Dr. Aust Lawrence, of Bristol, drew attention to the importance of recognizing that cancer in an early stage is curable, and of making an early diagnosis.

Dr. Scharlieb had found the clamp cause much pain and discomfort, and was of opinion that it retarded recovery.

Dr. Jessett, in reply, said that in cases which had extended too far for operation, he would use the curette and

pack the cavity with chloride of zinc, which brought away a slough of the diseased tissue.

Dr. More Madden, of Dublin, read a paper "On Primitive and other Hyperæsthetic Conditions of the Vulva and Vagina." The paper was devoted almost entirely to the treatment of these conditions. He advised particularly cleanliness; the use of germicides, as corrosive sublimate, and the application of methylene blue to the parts. He had found this latter do much good, but the disadvantage was the coloration produced, which was difficult to remove. In dyspareunia he advocated forcible stretching under ether.

Hæmatometra.—Dr. Murphy, of Sunderland, read a paper entitled "Notes of a Case of Hæmatometra successfully Treated by Hysterectomy."

Patient, aged forty two, married; never menstruated; tumor reaching two inches above umbilicus; has been forming some months. On vaginal examination finger passed two inches and was then stopped by a septum, which was found to be the hymen unruptured. No swelling could be felt above this, and no uterus could be made out on rectal examination. The tumor in the abdomen was thought to be ovarian. On opening the abdomen the tumor was found to be uterus distended with menstrual blood and with os occluded.

Menstruation.—Mr. E. T. Collins, of Cardiff, read a paper on "The Nervous Impulses Controlling Menstruation and Uterine Hemorrhage." His observations went to prove that there was a nerve-centre, but that its action was reflex and not automatic, and depended on irritation from the uterus.

Third Day, Friday, August 3d.

Separation of the After-coming Head.—Dr. Purslow, of Birmingham, read a paper entitled "An Account of Four Cases in which Separation of the After-coming Head had Occurred during Delivery, and of the Means used to Extract the Head." He narrated the cases: The first three occurred in connection with premature delivery before the sixth month, and the head came off owing to obstruction from a tight cervix. In none of the cases was there any sign of life in the child. One of the heads was extracted by the finger, and the other two by ovum forceps. In the fourth case the child was fully developed, but decomposed, and there was some narrowing of the pelvic brim; the child had presented by the breech, and in endeavoring to extract the head came off and was left in utero.

Dr. Purslow saw the case four hours later, after several attempts had been made to extract by forceps and crotchet. He extracted by the cephalotribe after very considerable difficulty, the difficulty arising from the tendency of the blades to slip off, owing to the difficulty of applying them over the centre of the head, and from the fact that when they were applied the lock was one and one-half to two inches within the vulva. The patient made an excellent recovery. He reviewed the methods of extraction advocated by ancient and modern authors, and concluded by advising recourse to the cephalotribe as the best means of delivery. Some of the other methods advocated involved bringing the head down in such a position that the jagged protruding ends of the fractured cervical vertebræ were apt to seriously injure the vaginal or uterine wall.

Ectopic Gestation.—Dr. Cullingworth, of London, read a paper "On a Case of Advanced Extra-uterine Gestation in which a Living Child was removed, the placenta left Undisturbed, and the Abdominal Wound entirely Closed." He said that it was sometimes advised in these cases to wait for the death of the child before operating, so as to allow the placental circulation to diminish. It had been advised at the operation to leave the placenta with the cord protruding from the abdominal wound. It had been proposed by Lawson Tait to leave the placenta to undergo absorption; the attachment of the placenta at the operation was dangerous, because the attachment of the placenta differed from that found in the uterus, and in ectopic gestation, there was no mechanism for arresting hemorrhage when it was detached. That absorption could occur was proved by those cases in which the fœtus had died. No operation had been performed and everything, with the exception of the bones, had disappeared.

In his case the child was alive at operation, the opening in the membranes was sutured, and the cord cut short. There was satisfactory progress for three weeks, on the twenty-fourth day a rigor occurred, and on the twenty-sixth day he opened the abdomen. He found purulent fluid in the remains of the amniotic sac, he washed out, but the patient died the same day.

Autopsy.—No suppuration in substance of placenta; child still alive and well. In future operations he would allow bleeding from the divided end of the cord, so as to lessen size of placenta; would divide cord quite close to placenta; would remove all the amnion possible, stripping it off from the placental surface, as the sepsis in this case arose from the remains of the amniotic sac; and it would teach him to remove parts not likely to cause hemorrhage in their removal, but likely from their non-vascularity to decompose.

Dr. Aust Lawrence narrated two cases in which he had operated; in one the placenta was absorbed and patient recovered; in the other there was septicæmia and death on the twenty fourth day. He would leave the placenta, and if there were symptoms would reopen the wound.

Dr. Cullingworth, in reply, said he would be on guard for septic symptoms and reopen abdomen at once. It was a difficult matter to decide, in cases in which the fœtus had died, how soon afterward to operate. He had operated four weeks after and removed the placenta with perfect ease. Drainage should not be used if any hope were entertained that the placenta would absorb. He would strip off amnion right up to margin of cord and cut the latter off as close as was possible.

Pseudo-ovarian Disease.—Dr. Rabagliati, of Bradford, read a paper on "Some Obscure Ailments which Simulate Ovarian Disease; their Causes and Treatment." The cases he described were often called ovarian neuralgia. There was pain in ilio lumbar region, pain in head, menstruation tending to be profuse, slight leucorrhœa, and these symptoms persisted for years. On making an examination the tissues were flabby; they were suffering from "diseases of a lax fibre" and deficient nutrition of the affected parts, and the essential cause of these sufferings was rheumatism of the muscle sheaths of the fibres of the abdominal and pelvic muscles.

The affected muscles, especially the rectus, were tender to pressure. On passing the finger into the umbilicus, a slight opening was felt, the edges of which were sharp and very tender. There was tenderness on pressure over the erector spinæ muscle and over the sacro-iliac synchondroses. The pectoral muscles and those at the back of the neck were also tender. The causes of the condition were malnutrition, especially too little nitrogeneous food. The symptoms were not due to hysteria. Treatment consisted in feeding and movements of the muscles under pressure; these latter the patient was instructed to do herself, and photographs were exhibited to show how the movements were performed. Cold baths were also used, and by these means Dr. Rabagliati said he had cured cases for whom removal of the ovaries had been advised.

The Section was then adjourned.

Curiosities of Cholera.—It is a fact of the various cholera epidemics that have swept Europe, that in every one the mortality at Rome and Madrid was greatest on Sundays, at London and Berlin on Wednesdays, and at Paris on Saturdays. At present, in St. Petersburg, where the death rate is upward of one hundred daily, the mortality list is increased one-fourth on Saturdays.—*Medical Age.*

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, April 6, 1894.

GEORGE L. PEABODY, M.D., CHAIRMAN, *pro tem.*

Chronic Double Parotiditis—Two Cases.—DR. ROBERT ABBE presented a man and photographs of this and another case of chronic double parotiditis. The first case, of which photographs alone were shown, occurred some years ago in a man whom he had first seen, as he was reminded later, in the practice of Dr. Weir. The enlargement of the parotid glands had persisted during the entire time the patient remained under Dr. Abbe's observation, perhaps a year and a half. Had at no time been attended by very acute symptoms; no suppuration. The man presented was the only other similar case which had come under his observation. The glandular enlargement had existed over a year, and had come on without apparent cause, although on account of the rapidity of its development Dr. Abbe had at first supposed it was due to mumps, a view which proved to be incorrect. Last summer the man had had an attack of appendicitis, but recovered after about two weeks, and was able to resume business in Wall Street until about two months ago, when he had another attack of appendicitis, for which Dr. Abbe operated and removed the suppurative appendix. Since that date the man had felt better than at any time for two years, had gained about twenty-five pounds in weight; but there had been no change in the parotid glands except that the swelling was a little more diffuse and a little softer, but contained no fluid.

In the first case the entire parotid had been involved; in the second only the upper portion in front of the tragus and lobule.

DR. WEIR remembered the first case, of which he said Dr. Abbe took the photograph for him. The swelling was harder than in the case of the man presented, was of the entire parotids, which were swollen in equal degree. Surgical interference was not considered necessary. The present case reminded him of one recently seen in a patient from Montreal, in which, however, the suspicion of symmetrical fatty tumors was confirmed by the presence of fatty growths in the neck.

DR. MCBURNEY was disposed to think, from the softness of the tumors, the presence of at least the greater portion of the parotid at a lower situation, and the fact that the man had been growing fat, that the case was one of lipomata symmetrical on the two sides.

DR. ABBE said he had had in mind the possibility of fatty tumors, but the growths had not been so soft in the first place; they had developed when the man was in his poorest health, before he had begun to take on flesh, and had remained of the same size since the first month.

DR. ANDREW H. SMITH remarked, incidentally to the question of symmetrical lipomatous tumors, that about seven years ago a patient entered the Presbyterian Hospital with seven or eight symmetrical lipomata in different parts of the body, there being two on the forehead, two on the neck, and others located symmetrically elsewhere.

Cholecystenterostomy by Murphy's Button—Recovery.—DR. ROBERT ABBE related the case. In October last Mrs. M——, aged forty five, had entered her fourth month of profound jaundice, with entire loss of appetite, emaciation, and exhaustion.

She had never had biliary colic, and the onset of this attack was unaccompanied by other symptoms.

Examination showed her to be very thin and deeply jaundiced. The gall bladder could be felt well distended. No other tumor was apparent.

Drs. C. W. Packard, Archibald Campbell, of Mt. Vernon, and I agreed that there was probably present obstructive pressure from cancer. As the patient's condition was critical I operated on the chance of finding stone obstruction, and to establish a new channel for the bile under any circumstances.

I found the common duct the site of a small hard mass no larger than the end joint of one's thumb. The gall-bladder was distended with a pint of black viscid bile; there were no stones in it.

The tumor was movable and could be pinched up between the thumb and fingers. It was hard enough to be a stone bedded in an inflamed duct, but needling and knife puncture showed it to be a small, hard neoplasm.

Further operation of any sort was prevented by the extremely low condition of the patient at this juncture, and an external bile fistula was quickly established. With assiduous care the patient rallied well under Dr. Campbell's attendance, and made an excellent convalescence. The jaundice quickly disappeared, strength and appetite came back, and she gained flesh. The duct obstruction remained absolute. Stools continued white, and a daily discharge of from fourteen to sixteen ounces of bile was caught in a thin rubber bag secured to the drainage-tube.

At the end of three months she was in good condition, and I operated to divert the bile into the duodenum. The gall-bladder was atrophied, but readily separated from the under side of the liver. Half a Murphy's button was put into a slit in the gall-bladder, and half in the duodenum six inches below the pylorus. The two were united and the abdomen closed. The purse-string suture of the thickened gall bladder made it a little difficult to draw the slit within the grasp of the button, but an outside stitch perfected the union.

Examination of the small tumor of the duct showed slight enlargement during the three months since first operation.

Uninterrupted convalescence ensued. The button was passed on the twelfth day.

Dr. Abbe also presented two specimens from the dog's intestine, one illustrating end-to end union after resection and the use of Murphy's button, the other long opening formed by lateral anastomosis. There was no doubt, he thought, but that the button could be used in the human intestine with greater security and a more perfect result than could be obtained by any other method with which he was acquainted. The rim of the button cut out a clean section of the gut, which did not show the tendency to contract which was observed after making a broad suture line.

DR. WEIR said fear had been expressed that some time one of the buttons might fail to pass and constitute an obstruction. It seemed, however, that experience had proven this objection unfounded in the end-to-end anastomosis. But it had been proposed to employ an elongated button for lateral anastomosis. In the speaker's opinion, the one shown and intended to accomplish this end would prove a failure, as it did not provide for long enough an opening. He inquired of Dr. McBurney what had been the result in the case at Roosevelt Hospital in which Dr. Murphy had himself made end-to end anastomosis with his button.

DR. MCBURNEY said the result had been successful, but other operations would have to be performed, as had been intended, before the patient could be dismissed from the hospital.

In reply to an interrogatory, DR. ABBE said the button came away in from seven to fifteen days. The quickness of the operation and security obtained by thus sandwiching together the ends of the intestine, recommended the method particularly to those who had not had great experience with the technique of abdominal surgery.

Cases in Genito-urinary Surgery.—DR. R. F. WEIR read a paper bearing this title. (See p. 161.)

A Medical Syndicate.—We read in one of the religious weeklies an enthusiastic notice of the adoption, by two churches, in a town in Iowa, of a plan of assessing every church member fifty cents a month; and in return offering free medical attendance and three dollars a week during illness, with the entire funeral expense in case of death.—*Polyclinic.*

Correspondence.

DR. EASTMAN'S METHOD OF SUPRAPUBIC HYSTERECTOMY.

To the Editor of the Medical Record.

Sir: In the current volume of the Medical Record, page 147, you speak of my address before the Gynecological Section of the American Medical Association, and say that my method consists of tying the uterine arteries in the broad ligaments close to the corner of the uterus. While the ligature in a given case may include the uterine artery, the whole point of originality which I claim was that the coiling arteries given off from the uterine artery nourished the uterus by a plexus, and not by penetrating the uterus; therefore, instead of ligating the uterine arteries at all, I go between them and the uterus, peeling out even the entire cervix, and only perhaps occasionally ligating some little spurting twig which has been abnormally enlarged.

If I had said anywhere that I ligated the uterine arteries, then there would have been nothing in my method to claim originality for. There may not be now, as others had already gone from below upward, peeling out the uterine cervix without clamp or ligature—notably Sauter, of Constance, Germany, three quarters of a century ago.

I repeat, the whole spirit of my essay, Section in San Francisco, read before the Michigan State Medical Society, was to prove that the coiling arteries of the uterus do not penetrate that organ, but are spread out over it in a capillary net-work, and that the uterine cervix can be peeled out from above downward without clamp or ligature to control hemorrhage.

Joseph Eastman, M.D.

Indianapolis August 13, 1894

BATHS IN INFLAMMATORY AFFECTIONS OF CHILDREN.

To the Editor of the Medical Record.

Sir: More than fifteen years ago you published an article of mine on the efficacy of balneotherapy in acute bowel affections seen so frequently, and so deadly, in the congested areas of cities during the heated term of summer. I have found this method as reliable as ever in my experience since that time. I first wrote on this subject in a report made to the Philadelphia *Medical Times*, in July, 1875, then edited by Professor H. C. Wood (where it appears under the head of "Correspondence"). and subsequently I made reports once or twice for the Medical Record.

The tropical heat of this summer, and the fearful rate of mortality in children under three years of age from entero-colitis, leads me briefly to recall my original publications. Dr. Wood, after a most successul use of baths in the Children's Hospital on the grounds of the Centennial Exposition, 1876, did me the honor to say (editorially), in 1877, in the Philadelphia *Medical Times*: "It must be granted to Dr. Comegys the credit of having introduced the most life-saving improvements in modern therapeutics."

The application of these baths is so simple that they can readily be applied in any house. We are summoned usually to see a child who has already been sick some time and undergone household treatment, and we find a hot skin; temperature, 102° to 104° F.; rapid pulse, 130 to 150; respirations, 30 to 40; with frequent vomiting and purging; tongue and mouth dry, intense thirst, insomnia, rolling of the head, and uttering distressing cries.

I direct an immersion bath in hydrant water, which with us in summer is about 75° F., and over the forehead and scalp, the head being held in the hand, is poured a stream of cistern water, 65° F. This operation is kept up for several minutes—eight to ten. In a little while the child ceases to cry and struggle, and it will drink greedily of water. Often the lips become bluish and the jaw trembles. After the bath, the patient should be put unwiped in a blanket. The sedative effects of the cold bath will speedily disappear, reaction is established, and the child goes to sleep promptly; the fever disappears, the pulse has lost its frequency, the breathing is slower and more natural, the vomiting and diarrhœa cease.

For several years past I have ceased to use cold water and rely entirely on hot bathing, always using a water two or three degrees above the fever temperature of the body, and keeping the patient submerged from six to ten minutes; still, however, pouring cold water over the head. I have made this change because the use of cold water is so much more painful or distressing to the little sufferers. When they are withdrawn from the bath they are wrapped in a soft and warm blanket, where they will sweat like a rain, and in this way the toxines which have accumulated in the blood, and so depress the cardiac, arterial, and capillary circulation, are eliminated and convalescent conditions are promptly established. In short, I have ceased to use cold baths in inflammatory affections of any form in young children.

I will not discuss internal medication, but barely mention small doses—one eighth grain—of calomel are very useful; or, what I like better, blue pill mixed with syr. rhu. aromat.; either remedy given in small doses every three hours. Food: Good milk and cream in equal parts and a certain amount of brandy every three hours. If a fresh air location can be obtained, there is very little danger of a relapse.

C. G. Comegys, M.D.

Cincinnati, O., August 13, 1894.

HYGIENIC TREATMENT VS "EAR-RUBBING," FOR "HAY FEVER."

To the Editor of the Medical Record.

Sir: A Hamburg physician (according to the *Deutsche Med. Zeitung*), whose condition from hay fever had been so severe as to necessitate his using a closed carriage all through the summer (sic!) has for the past three years "been able to lead an endurable existence during the hay-fever season," by means of roasting his own ears, so to say, "rubbing them till they became red and hot." "As soon as the least sensation of fulness in the nose appears, there is recognized a certain amount of pallor in the ears. A thorough rubbing of the ears, at times even to contusion, has always succeeded in freeing the nasal mucous membrane from its congestion. The rubbing must be thorough and repeated as often as the least symptom of congestion returns to the nose." The doctor declares that several patients have also been relieved by this method, and he hopes that some other physician may be able to give his patients some relief! This is indeed a worthy ambition. But from the writer's point of view, after years of the most complete success in the management of the disease by a perfectly rational method, Dr. Ferber's plan of relieving congestion of the nose by means of counter-irritation, getting up a congestion of the ears by rasping them till they are raw, seems pitifully absurd.

In view of all that we hear and see of this terrible enemy of the human race, it would seem that any remedy that will enable a victim of hay fever to "lead an endurable existence" in summer should be widely published; but any doctor who recognizes this disorder as a local fever, and does not directly cool his head instead of warming his ears, ought to have the latter soundly boxed—which, by the way, would answer in place of rubbing. (I should be sorry to have my prescription misinterpreted.)

Hundreds of hay-fever victims spend the summer at the White Mountains every year, where it is said the majority find great relief, and some, indeed, complete immunity from the disorder, in spite of the continuance of the very practices which provoke the disease further south, viz., winter dress and diet. At

the North Pole we may guzzle blubber and wear several layers of clothing without fear of fever, and so long as anyone is ignorant or foolish enough to stick to his winter dress and diet, as do, practically, all the hay-fever fiends the writer has known, he must go far enough north to give him something like winter atmospheric conditions.

The disorder under consideration is without doubt one of surfeit and skin smothering. A frugivorous and abstemious diet, plenty of air bathing, and the abandonment of all superfluous clothing—every fibre of clothing beyond a respectable covering of the body should be regarded as superfluous—under flannels worn while the sweltering wretch prays for a cold wave, what language can sufficiently emphasise such stupidity? This principle applied to the limit makes hay fever practically impossible. The same plan will speed the cure of an acute attack; proper head cooling and a fast day will do the rest.

The head is to be cooled in and in, moderately but persistently, till marked relief is felt, and repeated as often as the local fever returns. "I was wonderfully relieved in two hours, and completely cured the second day," was the report from a distant patient to whom I had wired the details of treatment. The fact of the matter is, we may all not only "lead an endurable existence" during the summer, but we may even be aggressively happy in spite of torrid waves, if we keep cool, as the artist mixed his colors, "with brains."

Charles E. Page, M.D.

867 Boylston Street, Boston, Mass.

BATHERS' "CRAMP."

Is it a Popular Fallacy?

To the Editor of the Medical Record.

Sir: We hear so much during the summer months of cases of drowning caused by so-called "cramp," that even an experienced swimmer must almost be afraid to venture beyond his depth. The newspaper article, commenting on a drowning case, generally begins with the fact that the bather was a good swimmer, but that he suddenly, when some distance from help, stopped his exertions and sank; the case is labelled "death from drowning caused by cramp."

Now, is this really so? Is the bather—an adept perhaps—liable to be struck down so quickly and without warning? If it is true, the danger from bathing in deep water is so great that one is hardly justified in running the risk.

I have not had the good fortune to analyze any case of so-called "cramp," but I have knowledge of a case of a young physician which, had it resulted fatally, would probably have been so called; as it was, the case did not end fatally and the young man lived to tell the tale: It was within two hours after eating a very hearty dinner, and after considerable exercise, that the bather, an excellent swimmer, took a plunge, feet first into the cool (70° F.) water of Hell Gate; immediately he arose to the surface, an inconceivable feeling of nausea came on, and everything before his eyes became hazy; he remembers that in a mechanical way he kept his arms and feet moving until help arrived, but during the whole procedure he was in a dazed condition—in street parlance, he had "lost his head"—the result of the nausea and possible congestion of the brain. Emesis was quickly followed by return to health. Now, this I take as an example of the danger which may befall anyone; exhaustion and cold are others; spasmodic contraction of the glottis from inhalation of water might be another; in fact, we have causes enough without calling everything "cramp;" and these causes may be reduced to a minimum by following some of the well-known hygienic rules for bathing, as (see Rohé): Never bathe within two hours after eating; never plunge in cold water feet first, but always head first, so as to avoid tendency to congestion of the brain, and never remain in the water after a feeling of chilliness supervenes.

Harvey Bashore, M.D.

West Fairview, Pa., August 23, 1894.

CONCERNING THE TABLET TRITURATE.

To the Editor of the Medical Record.

Sir: I believe there is a pretty general agreement among physicians that the tablet triturate is one of the best methods of dispensing medicines. Of the absolute reliability of these goods, as made by the best manufacturers, there can be no doubt. They are inexpensive. They are easily carried in the ordinary pocket case. The subdivision of dosage in the case of children and others, by crushing the tablet, is convenient. Not the least of the valuable features of the tablet triturate is that it enables the physician, by dispensing his own medicine, to limit, in a measure, the tendency on the part of some druggists to counter-prescribing. I believe, therefore, that one point in their manufacture is worthy of attention. I refer to stamping each tablet with a number. This has always been the custom of one large manufacturer. I learn that another leading firm is about to introduce the custom. This does not seem to me to be in the interest of the physician. I know of some instances where patients, who have had tablet triturates prescribed for them by a physician, have carefully preserved a numbered sample, and gone to a druggist with the request to "match" it; something after the manner in which ladies match ribbons at the bargain counter. The only reason I have ever seen given for numbering tablets is that of one manufacturer, that if a physician breaks a bottle, or if they become mixed in any manner, he could identify and sort out the tablets by their number. This is hardly a practical point, and breakage is little apt to occur. I believe the tablet triturate has come to stay, and I would like to see it manufactured exactly right in every particular.

Geo. W. Miles, M.D.

11 Cherry Street, Oneida, N. Y.

THE SOCIETY OF RUSSIAN PHYSICIANS.

To the Editor of the Medical Record.

Sir: In the *Novoe Vremya*, the popular Russian daily newspaper, there lately appeared an account of the proceedings of the Medical Association which was founded in memory of N. I. Pirogoff.

In connection with an interesting report on juridical medicine, it was said that the professional expert could be viewed as merely a part of the legal machinery, under direction of the judge, as a simple witness, and as a person competent to value the significance of scientific facts, and to determine, through special experiences, the anatomical changes brought about by an injury, or the accompanying psychological results ("data").

As *critique* of the foregoing, and of the whole subject, the reviewer stated that the sphere of the medico legal testifier should be enlarged; he should be empowered by law, together with the judge, to give conclusions, thus being able to show the necessary effects of the acts in question; and to keep apart all malevolent words or insinuations. Before the lawmakers lies the problem: 1. The relations of the physician to the court, in the field of medical jurisprudence. 2. The peculiarity and limits of his activity. 3. The method of action as to expert testimony; especially the bearing of all these on pedagogic instruction, which is continually changing with the advance of science.

After a discussion on disinfectants which had lasted two hours, one of the delegates summed up the matter, by saying: "The *Zemtsvo* (provincial legislature) sent me here to find out what capable experimenters would say—to learn something. I have listened long, and, I regret to say, have not obtained anything of value; I shall have to go home with empty hands." Russia is not the

only country where vain words become wearisome to the hungry mind.

The unhygienic condition of houses and villages was said to be largely due to the fact that their location is determined for the convenience of governmental administration, leaving out of view the topographical sanitary relations. The question of making legally obligatory the participation of medical men in the choice of building sites was considered by the society. The section *in re* decided that a medical inspection of new buildings was desirable. On account of extensive infectious diseases of the eyes, in villages scattered over the land, it was determined to recommend the use of preventive means at the time of birth.

The psychological division of the congress adopted a resolution for the appointment of a committee to take statistics of those showing evidence of mental infirmity and of the insane. They hoped, by this means, to relieve many now suffering in chains and hovels. Interesting demonstrations of nervous phenomena, in the perception of sensation, were given by the section devoted to psychiatrics. One physician stated that the indications of mental disease in Western Europe and in Russia were not identical.

An address was read advocating the systematic registration of sickness and death from tuberculosis, the same as in cases of infectious diseases.

From the remarks of one surgeon we learn that his recent microscopic observations, experiments, etc., make probable the parasitic origin of tumors, especially malignant ones. This tends to corroborate statements made by other investigators.

The next meeting of the society is arranged for the spring of 1896, in the heart of Old Russia, at the sacred city of Kiev.

F. B. Stephenson, M.D., U. S. N.

Boston, Mass., August 13, 1894.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE BRITISH SCIENTIFIC CONGRESS AT OXFORD—LORD SALISBURY'S ADDRESS AS PRESIDENT—THE OUTBREAK OF SMALL-POX—ARRIVAL OF A CASE OF CHOLERA ON A STEAMER—THE BACILLUS OF PLAGUE—DR. GRIFFITHS—DR. WIGLESWORTH—SIR JOSEPH FAYRER.

London, August 11, 1894.

No sooner have we finished our trip to Bristol for the British Medical Association, than we must hasten to Oxford to attend the meeting of its parent—the British Association for the Advancement of Science. This year is somewhat exceptional, as a great political leader has consented to preside, and there are rumors that his address will deal with the unsolved problems of science. The President is no other than the Marquis of Salisbury, who is Chancellor of the University of Oxford, but who appears on this occasion rather in the character of his F.R.S. It is known well enough to a few that his Lordship's studies have been by no means confined to the ancient learning or dimmed by his ardor in politics, but have extended so far in scientific directions as to entitle him to a high place among practical scientists. In some points his researches have been greatly appreciated, but no little curiosity was felt and expressed as to what he would say in his presidential address. Let me say at once that this address would have been no disappointment had it come from one of the masters whose whole life had been devoted to science, and when we remember the other directions in which Lord Salisbury's mind has been engaged, it is very remarkable. He showed himself at home in the theories of the chemical elements, in the discoveries of the spectroscope, and the problems of the ether. From these unsolved enigmas he passed to the riddle of life and sketched with a master-hand the controversy that has raged since Darwin's "Origin of Species" appeared. The effect of this work was shown and its proved results admitted, while the differences of view existing were also stated. The differences between the mathematicians and biologists were touched upon, but his Lordship said he would not get into the line of fire between them by intervening, and until the differences are adjusted laymen are justified in giving a verdict of "not proven" on the tremendous issues raised by the most advanced Darwinians. Then came a caveat against the "great danger scientific research is running at the present time, the acceptance of mere conjecture in the name and place of knowledge, in preference to making frankly the admission that no certain knowledge can be attained." This point was illustrated by a reference to Professor Weismann's dictum, that we must accept natural selection because, if not, we must fall back on the agency of design, which the professor seems to look upon as an inadmissible conclusion, or even a heresy. But Lord Salisbury's statement will not easily be met by Professor Weismann, especially as he reinforced his logic by falling back on the judgment of Lord Kelvin, "the greatest living master of natural science among us," and quoting the peroration of that master's address from the same chair, more than twenty years ago, these significant words:

"I have always felt that the hypothesis of natural selection does not contain the true theory of evolution, if evolution there has been in biology. . . . I feel profoundly convinced that the argument of design has been greatly too much lost sight of in recent zoölogical speculations. Overpoweringly strong proofs of intelligent and benevolent design lie around us, and if ever perplexities, whether metaphysical or scientific, turn us away from them for a time, they come back to us with irresistible force, showing to us through nature the influence of a free-will, and teaching us that all living things depend on one everlasting Creator and Ruler."

Small-pox is still with us. The outbreak at St. John's Wood, which I reported, is the most serious we have had since 1885, but it appears to have been conquered by the determined and active intervention of the sanitary authorities. But for the energy displayed, we might have found it extending to the whole metropolis.

A steamer arrived off Gravesend, from St. Petersburg, bringing cholera, one of the crew having died on the short voyage. The vessel was visited at once by the medical officer of health, and one or two suspicious cases removed for observation. The bacteriological diagnosis is cholera. We may probably have other importations, but if all are as carefully segregated we may perhaps escape an epidemic.

The bacillus of the bubonic plague has been sent to London, and was exhibited at Bristol also, where a very fine collection of cultivations of bacteria was shown by the Institute of Preventive Medicine; all sorts of microorganisms were exhibited growing on various media, and would give the opportunity of acquiring or extending knowledge to most people, could time be afforded for serious study. Of course, in a crowd at such an exhibition this is impracticable.

Dr. Griffiths, of Swansea, to whose cruel case of slander I have alluded in previous letters, has received £500 from the fund started in his defence, with an illuminated address of sympathy.

The medical superintendent of Rainhill Asylum, Dr. Wiglesworth, has been stabbed by one of the lunatics who had concealed a knife in his sleeve. The wound is serious, and the doctor not yet out of danger.

Sir Joseph Fayrer is about to retire from the service in which he has done such admirable work.

Double Pay for Twins.—A man in Ohio was arrested not long ago at the instance of a woman who claimed that he was the father of her unborn child. He was released on payment of $300. But when the time came it was found that there were twins, and the poor man was arrested again, and the penalty for his misdoing was promptly doubled by a sympathetic jury.

New Instruments.

A LID ELEVATOR FOR CATARACT OPERATION.

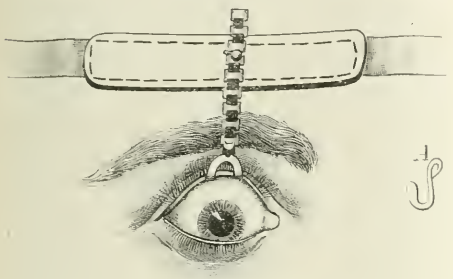
By EDWARD SWASEY, M.D.,

WORCESTER, MASS.

OCULIST AND AURIST TO WORCESTER CITY HOSPITAL.

THE most troublesome instrument that is used about the eye in removal of cataract, and in all operations in which the globe is opened, is undoubtedly the speculum. And moreover, it is always a possible means of injury to the eye, for the patient may at any moment forcibly press it down upon the globe by the strong action of the orbicularis muscle, and if the corneal section has been completed, he will almost surely force the lens out prematurely, and not infrequently some of the vitreous will follow it.

Because of this danger, some of our best operators carefully remove the speculum as soon as the lens capsule



has been opened, and thus avoid this possible dangerous compression of the incised globe. Others do away with the speculum entirely, and elevate the upper lid by means of the lid elevator, held by an assistant. But the arm of an assistant is unavoidably more or less in the operator's way, and must be worked around, even if a trained and trustworthy hand of an assistant could always be at command to hold the elevator. But an instrument which securely holds the lid open, and has its point of anchorage outside the lids, is much freer from the danger of this compression of the eye than is the speculum, which simply rests within the lids. And at best, the speculum is an awkward instrument to unlock and remove from under the two lids, at a time when the utmost gentleness is necessary in every step of the operation. At least I have found it so, and seeing the simplicity of the lid elevator, I have tried to make use of it, and yet be free from an assistant. The little device shown in these drawings accomplishes the object. The lid-hook of the elevator is carved into the shape shown at *A*, and it then holds securely under the lid; the ordinary form is at once tilted from under the lid at the first attempt to close the lid. This is attached by a flat-linked chain to a small, blunt, shallow hook on a forehead piece which is securely held in place by the ordinary head-band. The chain is two and a half inches in length, and has eleven open links, which admit of fine adjustment of the lid elevation; the hook gives an additional length of half an inch. The shallow hook allows the quick and easy removal of the chain without forcibly drawing on the lid, and once detached the lid hook is as readily slipped from under the lid as any elevator. The flat links adjust themselves to any angles that are found from the lid piece to the head-band, and the whole field of view is unobstructed for the operator. The patient cannot even begin to close his eye with this in place.

The chief objections I find to the Pyle instrument[1] are that it projects forward from the brow so far that it seriously obstructs the operator's view, and the adjustments are so many, too much mechanism is required. I have made use of the instrument here described in cataract operations, and it certainly has advantages over the ordinary speculum: it is so quickly and easily removed. George Tiemann & Co., of New York, made the instrument for me.

[1] MEDICAL RECORD, August 1, 1891, p. 139.

A POCKET PELVIMETER.

By HERMAN L. COLLYER, M.D.,

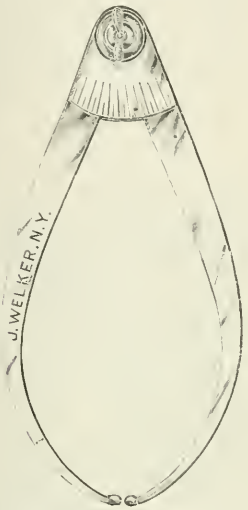
NEW YORK.

GYNECOLOGIST TO THE WEST SIDE GERMAN CLINIC, ASSISTANT GYNECOLOGIST TO THE FRENCH HOSPITAL, ETC.

THE measurements of the female pelvis are so great a necessity in obstetrics that I feel a simply constructed, inexpensive instrument, within the reach of every physician, would be very acceptable, and would tend to encourage pelvimetry in the profession generally.

It is a frequent occurrence that a contracted pelvis is unrecognized until the labor has become tedious, at a time when symphyseotomy is made difficult by the delay.

In my first case of elective symphyseotomy, performed successfully June 5, 1894, I was led to devise some accurate, inexpensive pelvimeter, possessing all the advantages of the expensive instruments, and correcting some of their disadvantages. As the idea is purely original, I may say, I hope by the insertion of this article my read-



ers will derive benefit from my endeavors and be encouraged to practise pelvimetry more extensively.

The instrument is twelve inches long, elliptical in shape, capable of measuring to the extent of fourteen inches, with a pivot hinge and thumb-screw attached to one end. At this end there is a semicircular plate, marked legibly with the metric system on the one side, and the English system of measurement on the other, in a convenient position to be read easily. The advantage of having the two systems together is very great, as it admits of ready comparison and reference.

Through the kindness of Mr. J. Welker, instrument-maker, of this city, I am able to present to the profession a portable and inexpensive pelvimeter, which will, I think, commend itself to everyone.

109 EAST FIFTY-FOURTH STREET.

Salines operate in three or four hours. Croton-oil in one or two hours. Jalap, gamboge, and senna in three or four hours. Rhubarb and castor-oil in from four to six hours. Aloes and mandrake in from ten to fourteen hours.—*Louisville Medical Monthly.*

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 25, 1894.

	Cases.	Deaths.
Tuberculosis	86	115
Typhoid fever	26	7
Scarlet fever	22	1
Cerebro-spinal meningitis	0	2
Measles	11	2
Diphtheria	113	36
Small-pox	7	0

To Increase the Birth-rate of France.—Stringent laws have recently been enacted by the French Government, which, despairing of obtaining any increase in the birth-rate of the land, is endeavoring to save the few children that are born. One of these regulations forbids, under a severe penalty, anyone to give infants under one year any form of solid food, unless such be ordered by a written prescription, signed by a legally qualified medical man. Other regulations are equally restricting, and, as the French have a knack of enforcing their enactments, down to the most trifling ones, as American visitors to Paris often find to their cost, it is probable that many childish lives will be saved. One could wish, on seeing an East-Side tenement mother feeding her few months' old baby with a peach or banana bought from the curb fruit-stall, after half a day's exposure to the August sun, that the municipality of New York would copy a few of these French regulations. It would vastly lessen the work of the dispensaries and visiting tenement physicians.

The Treatment of Diphtheria with Immunizing Serum.—Professors Ehrlich, Kossel, and Dr. Wasserman, in Berlin, have published a paper on the application of curing serum, as invented by Professor Behring, assistant of Professor Koch. Behring had undertaken to give an immunity from the diphtheritic poison, and after that to get a serum from the blood of those animals, by which he hoped to protect individuals of the human race against the results of diphtheria, as well as to cure the disease when already developed in an individual. Ehrlich, Kossel, and Wasserman have followed Behring in his experiments. They always had in view to use the results of their experiments for curative purposes. They experimented on goats. We will say nothing of the technical dates for giving the serum. Two hundred and twenty patients with diphtheria were treated with the serum. Of these there were cured 168, or 76.4 per cent.; 52 died. Tracheotomy was performed in 67 cases, of which 30 died; the rest recovered. But a true insight of the curing effects of the injections is gathered only by grouping the number of the diseased people by the days after the infection on which the treatment was begun:

Day after beginning of treatment.	Treated.	Cured.	Died.	Percentage of cures.
First day	6	6	0	100
Second day	66 (9 tracheotomies.)	64 (7 tracheotomies.)	2 (2 tracheotomies.)	97
Third day	29 (8 tracheotomies.)	25 (7 tracheotomies.)	4 (1 tracheotomy.)	86
Fourth day	33 (14 tracheotomies.)	30 (10 tracheotomies.)	9 (4 tracheotomies.)	77
Fifth day	23 (10 tracheotomies.)	13 (4 tracheotomies.)	10 (6 tracheotomies.)	56.5

It is to be seen by this table of dates that the safety of the serum treatment depends essentially upon the date on which the treatment of the children is begun, and that on the first day results were had never seen before. Of 72 children received at the hospital during the first two days of the disease, there were only 2 deaths; of 72 cases treated *without* serum after statistics reaching over twenty five years, there were 25 deaths, or 34.7 per cent.

The above-named experimenters give the following points of view for the treatment with their serum of those children sick of diphtheria: 1. *The fate of the children depends upon the treatment during the first three days of the sickness.* Therefore the serum should be injected as soon as possible after the beginning of the disease. 2. As there must be a surplus of antitoxine in the sick body, the dose of commencement should be, in light cases, at least 200 unities of immunization. In cases of gravity and in those tracheotomized, 400 unities were needed. The treatment with serum should be continued some time after ceasing of rise of temperature and of the local inflammation. The total amount of dispensed serum may reach in a single case (in correspondence with the gravity of the symptoms) 500, 1,000, 1,500 unities of immunization.—Berlin Correspondent *Journal of American Medical Association.*

A Revival of Hindu Medicine.—The educated natives of India intermittently advocate, through the native press, the resuscitation of indigenous and time-honored methods of treating disease which have fallen into disrepute and disuse. The merits of ancient drugs and of primitive practices and practitioners are on such occasions vaunted as being better in themselves and better adapted to the people and circumstances of Hindustan than exotic systems and medicines. It appears that dispensaries have been established in the native states of Travancore and Mysore, for the purpose of giving the natives of these territories the benefits of Hindu medicines, which are considered more congenial, cheap, and efficacious than foreign medicines. Foreign surgery is allowed to be infinitely superior to native, and no attempt is made to compete with that. It is recognized that native doctors are, with few exceptions, ignorant and uneducated, and it is proposed to teach them "chemistry, physiology, hygiene, and other kindred subjects."

Worse than "Pidgin."—Dr. W. P. Noble, of Pao Ting Foo, China, sends us the following letter, addressed to him by a native in government employ in that city: "I am deject indeed for I got a kind of measles and cannot come to your Hospital because on duty this noon; I not know whether you can come to my office or not, I hope you come and let you know what measles it is. If you allow me well much hosanna recieve from you. I cannot conceal my sickness from you. When I make water the water come to the end and stop there until a little while, then meander out in that time of which I speak that is very painful. I hope you excuse me at once.

"Yours respectifully,
"P. S. W."

The Difference.—When a lawyer defends a man for his life, and by some technicality or shrewdness he gains his case that lawyer is often spoken of as "that man who saved my life." When a person is stricken down, we will say with strangulated hernia, just as sure death as hanging unless relieved, he sends for the physician, who understands this technicality of nature, and relieves him, saves him not from the gallows, but death. He does not say "that physician saved my life," but "through the providence of God I escaped death."—*Charlotte Medical Journal.*

Lively Apothecaries and Deadly Consequences.—In Stendal, not long since, the police forcibly closed a drug-store where they found the proprietor away, and the two clerks intoxicated. Before their condition was discovered they had compounded a number of prescriptions, mixing up various drugs without any regard to directions or dosage.

The Plague in London in 1664, with which the present epidemic in China is believed to be identical, caused 69,000 deaths out of a total population of 460,000.

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Original Articles.

SOME CONSIDERATIONS ON DIFFERENT TYPES OF EXUDATIVE INFLAMMATION.*

A STUDY BASED ON BACTERIAL EXAMINATIONS FROM ONE HUNDRED AND THIRTY-FIVE SURGICAL CASES.

BY CHARLES N. DOWD, M.D.,

NEW YORK.

ASSISTANT SURGEON TO THE NEW YORK CANCER HOSPITAL.

IT is evident that all inflammations which call for surgical treatment are not alike: some spread in the tissues rapidly and persistently; some remain localized, but cause necrosis of the involved tissues; others neither spread far nor cause severe injury to the affected parts. Again, some cause profound constitutional disturbance with very slight local effect, while others produce extensive local disturbance with slight constitutional effect. Some cause discharges of greenish, odorous pus, so profuse as to quickly saturate bulky dressings; others give only a small amount of thin, sero purulent effusion. These differences are largely due to the particular species of bacteria which cause the inflammation, and to variations in virulence which bacteria of the same species may show, although the site of the infection and the condition of the patient may have much influence.

In the effort to investigate the subject, we have in the past year made bacterial studies from 135 cases which were seen in the Vanderbilt Clinic, the New York Cancer Hospital, and in two instances in the practice of other surgeons who gave us the opportunity of studying cases of pyæmia.

Those seen at the Vanderbilt Clinic were ambulant cases; a large number of them had acute forms of suppurative inflammation, which had originated from small wounds or had extended into the subcutaneous tissues, so as to cause cellulitis of greater or less extent. Some had fresh wounds with little inflammation about them; some granulating and healing wounds, and some furuncles and abscesses of a less acute type.

Those seen at the Cancer Hospital were operative cases. In some of them ulcerating growths were examined before operation; in others wound discharges and stitches were examined after operation.

The cases may be clinically grouped as follows:

	Cases.
Cellulitis	51
Fresh infected wounds	17
Granulating wounds	18
Healing wounds (stitches)	5
Furuncles	7
Abscesses	37

The material for study was obtained on the sterile swabs which have been described by Dr. Park.[1] They are made by twisting bits of cotton on the ends of pieces of stiff wire. They were inserted into the depths of the wounds so as to avoid surface contamination, and were immediately streaked across agar Petri's plates. The plates were then put into the thermostat and the growths studied in the ordinary way with the microscope, and by further gelatine and beef-tea cultures; also by animal inoculations in certain instances. In a large proportion of the cases morphological studies of cover-glass preparations of the pus were also made.

The bacterial work was done, with the collaboration of Dr. William H. Park, in the Bacterial Laboratory of the College of Physicians of New York City, or in connection with that laboratory.

The following table indicates in a diagrammatic way the results of the examinations:

	Cellulitis. 51 Cases.	Infected Fresh Wounds. 17 Cases.	Old Granulating Wounds. 18 Cases.	Healing Wounds, Stitches. 5 Cases.	Furuncles. 7 Cases.	Abscesses. 37 Cases.
Streptococcus pyogenes alone	9	3	..	..	..	8
Streptococcus pyogenes predominant	23	3	..	..	..	8
Streptococcus pyogenes relatively few	3	1	6	..	..	1
Staph. pyogenes aureus alone	11	1	1	1	7	6
Staph. pyogenes aureus predominant	8	2	..	..	..	1
Staph. pyogenes aureus relatively few	13	3	..	..	..	2
Staph. pyogenes or epidermis albus alone	1	4	2	4	..	2
Staph. pyogenes or epidermis albus predominant	..	1	..	..	..	..
Staph. pyogenes or epidermis albus relatively few	10	5	3	..	..	6
Staph. cereus albus	3	1	2	..	..	1
Staph. citreus	1	..	2	..	..	1
No growths on agar	..	..	..	..	..	11
Very few growths on agar	..	..	3	..	..	3
Bacillus pyocyanus	..	..	1	..	..	3
Bacillus coli communi	..	..	..	..	..	3
Overgrown	4	..	2	..	.	1
Few undetermined colonies	12	2	5	..	..	5

In those instances in which streptococcus pyogenes are recorded "predominant," the associated forms were mostly staphylococci, and in those instances in which staphylococci are recorded predominant, the associated forms were mostly streptococci.

Analysis of the Tabulated Results.—From all the cases in which there was acute inflammation accompanied by severe constitutional symptoms, abundant cultures of streptococcus pyogenes or of staphylococcus pyogenes aureus were obtained; frequently both existed in the same case. These two organisms were by far the most important ones found, and as there were well-marked peculiarities in many of the inflammations which they caused, it may be well to give a somewhat detailed account of the conditions in which they occurred. To this we add a description of the conditions in which certain other forms were found.

Streptococcus Pyogenes.—Among the fifty one cases of cellulitis studied there were eight which showed a persistent tendency to spreading inflammation with undermining of the tissues, which continued in spite of free incision, careful packing, and moist dressing, and in all of these streptococci were found.

As an example of this group we may note one in which an inflammation which involved the entire forearm spread rapidly from a small butcher-knife cut on the back of the hand; free incisions were promptly made, the wounds were carefully packed with gauze, and moist antiseptic dressings were applied, much of the time daily. Still the inflammation continued for more than three months, the fascia sloughed away in large pieces, and there was a continual undermining of the tissues, with the formation of pus pockets even when healing was progressing at the margins of the incisions; and finally the patient was left with a stiffened hand and wrist. Repeated bacterial examinations of the pus showed only streptococci pyogenes in the depths of the wound, while a few staphylococci were also twice found on the surface.

* Read before the Surgical Section of the New York Academy of Medicine, March 12, 1894.

The two cases of pyæmia illustrated the same characteristic spreading, undermining streptococcus inflammation. In both, the streptococcus and staphylococcus pyogenes aureus were found in the original wounds, while in the metastatic abscesses the streptococci were found without the staphylococcus pyogenes aureus. In the first a phlegmon of the arm appeared a week after the operation, and progressed until it involved the entire arm and hand; a little later there was a similar phlegmon in the back; there was also inflammation in several of the joints. Incisions were made at different times in five separate places in the back and arm, and pure cultures of streptococci were obtained from the pus found at each incision; the abscesses were persistent; the one in the back remained open six months, until the patient's death. In the other case the metastatic abscesses were of a similar character, but less extensive.

This spreading, undermining characteristic of streptococcus inflammation has been often described and is well established. Inflammations of this variety were the most virulent which we had to deal with; no available treatment seemed sufficient to promptly limit the growth of the streptococci in the tissues; cultures could be obtained from the walls of the pockets after washing them with a 1 to 1,000 solution of bichloride of mercury, and free and early incision and packing did not prevent the undermining process of the inflammation.

There was a group of cases closely allied to these in which streptococci were always found; cases which represent an intermediary phase between typical cellulitis and typical erysipelas. In the skin there was induration and an inflammation somewhat less distinctly marginated than in typical erysipelas; in the subcutaneous tissue a little pus was found.

The condition is illustrated by the following case: A healthy man scratched his hand on a dry-goods box one week before admission to the clinic. Three days later he began to have pain on the anterior surface of the arm just above the elbow, and at the same time he had a chill. On admission there was an indurated area on the anterior surface of the arm about 5 x 6 inches in extent. The skin was œdematous and red. On the outer side the redness was marginated and extended half way down the forearm. On the inner side it was not marginated. Temperature, 100° F.; pulse, 80. There was hardly any axillary tenderness or enlargement of lymph nodes. There was no distinct fluctuation, but an aspirating needle inserted just above the elbow withdrew pus from which a pure culture of streptococcus was obtained.

Most surgeons would not call this erysipelas, but in the seven cases which were of this general type we were much puzzled to know whether we were dealing with erysipelas or cellulitis, and in one instance a patient who had diffuse induration and inflammation about an infected wound, which seemed far less like erysipelas than the above, returned on the second day with typical erysipelas so well marked that no one would question the diagnosis.

Cases like these make a chain of union between erysipelas and cellulitis, which would lead us to believe that there is no absolute and fundamental distinction between the two phases of inflammation. This is practically the same ground which bacteriologists have taken.

Passet,[2] Rosenbach,[3] Prudden,[4] Biondi,[5] Fraenkel,[6] Roger,[7] Welch,[8] Baumgarten,[9] Kirchner,[10] Crookshank,[11] and many others, have studied the relationship between the streptococcus pyogenes and streptococcus erysipelatis, and the weight of authority indicates that there are no constant differences between them, and that the variations are no greater than are frequently seen in individuals of the same species.

It is, however, a point of considerable importance, that infection from one type of streptococcus inflammation is likely to reproduce the same type. Infection from erysipelas is likely to cause erysipelas, as all surgeons know and as Fehleisen[12] proved by a series of inoculations. Just how likely it is to produce other forms of inflammation we do not know, but Coley[13] in making 120 inoculations to produce erysipelas, only caused two abscesses, and these he thought were due to contaminations of staphylococci. Hajek[14] found that the original type of streptococcus inflammation was usually reproduced in inoculated animals.

This close alliance between erysipelas and phlegmonous inflammation is a matter of much practical importance. We fear erysipelas and avoid all contact with it when engaged in operative work. The man who would care for a case of erysipelas and then do an operation or attend an obstetric case, would be considered very culpable. Yet the same precautions are not taken in regard to other kinds of streptococcus inflammation. A suppurating wound in which the pus teems with streptococci is certainly more likely to contaminate the surgeon's hands than a case of erysipelas is, and this contamination may well be followed by suppuration, phlegmonous inflammation, or perhaps by pyæmia, in the patient whom he operates upon soon afterward. But such an occurrence would be considered an unavoidable wound accident, while the erysipelas, which is more characteristic, would be traced to its true source. The danger of transmitting erysipelas has long been guarded against, because the infecting case and the infected case so closely resemble each other. But when we remember that in any case of streptococcus inflammation we are dealing with a germ which is not to be distinguished from that which causes erysipelas, and furthermore, that it is often capable of causing an inflammation more virulent than erysipelas, it is obvious that the greatest care is necessary to avoid transmitting infection.

Beside these groups of cases, streptococci were frequently found where there was nothing particularly characteristic. They were present in 65 out of the 135 cases examined. They were found in almost all the cases of severe inflammation, but they were also present in many of the mild ones, and they did not always cause a spreading inflammation. In one instance they were found in almost pure culture in a finger bleb which seemed hardly more than a large blister, and which had existed for several days without showing acute inflammation. Whether these differences depend on the varieties of streptococci and their variations in virulence on the constitution of the patient, or on the thoroughness of the inoculation, one can hardly state. Probably all these factors have their influence. The condition finds its parallel in other forms of infection; for example, the bacillus typhosus sometimes causes only a slight fever and sometimes causes death, and Loeffler's bacillus sometimes causes a slight sore throat, and sometimes a diphtheria which is quickly fatal.

Variations in the growth of the streptococci were noticeable. Some grew in long chains and some in short ones; and the colonies differed in their general appearance microscopically and macroscopically, also in the quality of imparting cloudiness to the beef-tea in which they grew. In view of the work of v. Lingelsheim[15] on the subject, we noted the relationship between the length of the chains and the virulence of the infection, and found that in certain instances the short- as well as the long-chained varieties were virulent.

Staphylococcus Pyogenes Aureus.—In the entire series of 135 cases it was found in pure cultures 26 times, and in no one of these cases was there a spreading inflammation. The cases of cellulitis of the hand illustrate this well—there were 11 of them in which staphylococcus pyogenes aureus alone was found, and in no instance did the inflammation extend upward so as to make incision above the wrist necessary; while in the 23 cases in which streptococci were the predominant bacteria, there were 5 in which incision was necessary at some point above the wrist, and streptococci were found in these incisions.

A boil illustrates in a limited way the type of inflammation which these staphylococci cause: a severe inflammation producing necrosis of tissue and giving a comparatively severe constitutional reaction, but not

spreading widely by direct extension. Seven boils were examined, and all had them in pure culture.

The following case also illustrates this kind of inflammation: The patient sustained a compound fracture of the middle phalanx of the ring-finger, which was followed by inflammation in the soft parts and in the bones. Three weeks after the injury amputation was done through the proximal phalanx, in the hope of preserving a part of the finger, but suppuration continued in the soft parts of this stump for more than two months. The inflammation, however, never extended above the finger. It was severe enough to destroy the bone before the amputation and to keep up a most tedious suppuration after it, but it did not show any tendency to extend upward.

Cultures were made from this wound at six different times, and unmixed growths of staphylococcus pyogenes aureus were obtained in all instances excepting one; in that one a contamination—presumably saprophytic—was also found. We are well aware that these staphylococci may enter the blood current and cause a fatal pyæmia, and that they have been found in many cases of osteomyelitis,[16] but in this series of cases they remained localized even when the streptococci which accompanied them in the original wound caused metastatic abscesses.

These staphylococci have frequently been considered more important than the streptococci, but the recent bacterial studies indicate that the streptococci are the more important and the more common; in this series of cases they were certainly so. It is to be remembered that the staphylococci grow in large thick colonies on the agar, while the streptococci grow in small thin colonies; hence it is possible that in some cases which have been reported the streptococci may have been covered by the large colonies of staphylococci. One of the cases here recorded shows how easily such an error could be made. An infected wound was surrounded by an inflammation which had the appearance of a streptococcus inflammation, but the first culture showed abundant staphylococci and very few streptococci; a second culture, however, taken on another day from an undermining part of the wound, showed streptococci almost alone. It would obviously have been an error to conclude from the first examination that this was an instance of staphylococcus inflammation. The difficulties of finding the colonies of streptococci are greater where roll tubes are used than with Petri's plates.

Staphylococcus pyogenes aureus was also found in certain instances in mild inflammations in which there was nothing particularly characteristic.

The inflammations caused by staphylococcus pyogenes aureus were much more easily controlled than those caused by streptococci. Moderate-sized incisions with gauze packing and moist, mild antiseptic dressing, were usually quickly efficient.

Staphylococcus Pyogenes Albus—Staphylococcus Epidermis Albus.—Besides those mild cases already referred to there was a group of cases which showed a mild form of inflammation and gave cultures of white staphylococci, or in certain instances of lemon-colored staphylococci. One could not say that in all mild cases only these staphylococci were to be found, but where they alone were present the inflammation was always of a mild type.

The white staphylococci were found in pure culture in thirteen cases. Only one of these was a case of cellulitis, and that was sufficiently interesting to merit particular attention. The point of infection was apparently a palmar blister at the base of the middle-finger; the inflammation extended into the palm and between the fingers, and caused considerable swelling and superficial fluctuation. There was, however, little pain or constitutional disturbance, and on incision the pus was found to lie mostly just below the epidermis, which was raised from the true skin. After incision the inflammation subsided very quickly. Bacterial examinations were made four different times, and white staphylococci were found in pure culture each time.

This was manifestly a very mild form of inflammation, and the other conditions in which the white staphylococci were found indicated an equally mild action. Five times stitches were examined from wounds which healed aseptically or with only slight moisture, and from four of them pure cultures of the white staphylococci were obtained. They were also found alone from a needle used in the skin of a clean wound and from a clean drainage opening. Once they were found in pure culture in a blood clot under which a resected finger-joint had healed; twice in old sinuses which led to dead bone; and they were almost always found in superficial granulating wounds.

Hence we see that in all instances they were so found as to indicate that they had a very mild infective power. They were found in association with other bacteria very frequently in wounds which had been opened. In these instances it is believed that they were carried in from the skin, and that usually they were not the cause of the original inflammation.

In 1884–85, when the classical articles of Rosenbach[17] and Passet[18] appeared, describing the pyogenic cocci which they found in acute inflammations, the staphylococcus pyogenes albus was believed to be of practically the same pyogenic power as the staphylococcus pyogenes aureus with which it was usually associated. This belief was based largely on animal inoculations.

In the only case, however, in which Rosenbach found the albus in pure culture, the inflammation was of so mild a type as to have been clinically considered gonorrhœal rheumatism of the knee.

Passet did not record the clinical histories of his cases. Since that time numerous observations have been recorded which indicate that they are usually of very mild pyogenic power.

Welch[8] has made a very extensive study of the subject, and has found white staphylococci regularly present in the skin, and frequently present at the margin of healing wounds. He found that they usually did not interfere with the healing of wounds if the tissues were in good condition. Although they might occasion stitch abscesses or a little suppuration along drainage openings, or where the tissues were strangulated, they might cause severe inflammation. Their pyogenic power was so slight that he considered the term staphylococcus epidermis albus preferable to staphylococcus pyogenes albus.

Whether staphylococcus epidermis albus and staphylococcus pyogenes albus are the same organism, is not entirely settled, but Welch's suggestion that the former may be a modified form of the latter, certainly meets the requirements of the present stage of the investigation In this series of cases no effort has been made to separate them. Those colonies which remained white on the agar for several days, which were morphologically like the pyogenic staphylococci, and which fluidified gelatine, were recorded simply as white staphylococci.

Among the other observers who have found white staphylococci of mild infective power, we may mention the following:

Grisky and Robb[19] found them in nineteen out of forty-five laparotomy wounds, and they did not prevent prompt healing.

Bossowski[20] found them in wounds which were treated aseptically, but they did not interfere with the healing in any marked degree.

Lanz and Flach,[21] in examining wound discharges, found that where staphylococci pyogenes aurii were present there was severe suppuration in all the cases but one, and that where the white staphylococci alone were present the wounds regularly healed well.

Many cases of serous effusion have been reported which contained the white staphylococci. Levy[22] produced suppuration in rabbits in two instances from white staphylococci so obtained. For further literature on the subject, the reader is referred to Jordan[16] and Sternberg.[23]

These observations indicate that the white staphylococci usually cause a much milder type of inflammation

than the golden ones. We say usually, because we must recognize the variations in virulence which are shown by all the forms of bacteria which we are studying.

The question is one of much practical importance: here is a form of suppuration which need not be feared as the severer forms are; for instance, it is possible for a wound to heal well under a blood clot when these cocci alone are present. It seems reasonable that granulating wounds which have only this form of infection should have their edges brought together and only a very small allowance for drainage made, and that all wounds which have only this form of infection should be treated with little fear of serious inflammation—*staphylococcus pyogenes citreus*.

In four instances, staphylococci were found which appeared identical with the white staphylococci in all respects, excepting that after eight or ten days they turned to a lemon color on agar.

They were found in a superficial abscess and in healing wounds, and produced very slight constitutional reaction. They fluidified gelatine slowly, and when injected under rabbits' skins in beef-tea cultures, they produced only a little induration and congestion.

They are much slower in turning to a lemon color than the staphylococci pyogenes citrei described in the text-books.

Cases from which no Bacterial Growths Could be Obtained on Agar.—There was a group of eleven cases from which the pus gave no growths on agar. They were abscesses presumably tubercular, or buboes, and the courses which they ran bear decidedly on the question of injection versus incision for these conditions. A case of large tubercular abscess shows the point of issue. It was so situated as to make the diagnosis obscure until incision was made. The incision liberated a large amount of pus which was sterile, in the sense that no bacteria grew from it on agar. A few days later, however, the pus in the wound contained streptococci and the symptoms changed accordingly. There was the febrile reaction and the constitutional symptoms which accompany the streptococcus infection. It had been impossible to keep infection from the open discharging wound, and the patient had suffered accordingly. When the diagnosis can be made in such cases, it is manifestly wiser not to open the abscess in such a way as to allow the entrance of the streptococci.

Some of the tubercular cervical abscesses showed a similar course. There is one under observation at the time of writing, which was incised and curetted three and a half months ago, which has discharged thin pus and formed unhealthy granulations ever since and is still open; while others of a similar nature which were aspirated, and injected with a ten per cent. mixture of iodoform in vaseline, show only a little hardening at the site of the abscess.

Buboes show a similar condition. They frequently remain open and suppurate for many weeks when they are incised and curetted; yet we have seen two heal promptly and well under aspiration and injection of iodoform and vaseline, and Otis[24] has reported many such cases.

The reported cases of pyosalpinx in which the pus is found to be sterile, illustrate the same condition of pus without infective power, and such are not to be treated as those cases are where there is acute purulent inflammation.

It is possible that some of the cases examined had abscesses which had become sterile through the dying out of the bacteria which had caused the original suppuration. Further studies are needed on this point. There certainly were many cases which were almost sterile, in which only very a few bacteria grew along a heavy streak of pus; perhaps a dozen colonies where hundreds of colonies would be expected if the process had been an acute one; hence it is evident that bacteria inclosed in an abscess may show a tendency to die out.

Cases in which the Bacteria which Caused the Original Inflammation were Replaced by Others.—Some of the cases already referred to, in which the white staphylococci were found, belong to this group, since they were evidently carried into the wounds from the skin. In other cases, particularly old ulcers, the bacteria of decomposition were found in such numbers as to cover all other forms on the agar. In others, the bacillus pyocyaneus was found. In a recent monograph, Schimmelbusch,[25] called attention to some interesting facts concerning these bacilli.

1. They are regular inhabitants of the skin, particularly in the axilla, the groin, and the anal furrow.
2. They are capable of infecting wounds which occur where they exist.
3. They usually cause profuse suppuration with little constitutional disturbance.

These characteristics were shown in the four cases in which we found these bacilli. In two of them axillary abscesses which at first contained streptococci, afterward had the bacilli pyocyanii; a third case showed the growth from a mastoid abscess; the plain gauze dressing in this instance became bright green over a considerable area; in the fourth case the patient had a severe burn of the hand, the discharge in this case was so profuse as to quickly penetrate a gauze dressing an inch or two in thickness; yet when some of the metacarpal bones were removed the wounds healed well, the patient seemed to suffer only from the exhausting effect of so much pus production.

Healing occurred in all the cases within a resonably short time, and in all suppuration was free but the constitutional symptoms were slight.

Bacillus Coli Communis.—It may be mentioned that in three cases of ischeo-rectal abscesses the bacillus coli communis was fonnd. Neither of the cases were particularly virulent. In both the bacillus grew in pure culture on the agar plates. No particular importance is ascribed to these cases as their number is so small.

Summary.—In review we may say that in the ordinary cases which we have seen, at least five fairly distinct types of inflammation have been recognized.

1. A severe form of inflammation which showed a tendency to spread through the tissues, and which was caused by the streptococcus pyogenes.
2. A severe form of inflammation, more localized than the above, caused by the staphylococcus pyogenes aureus.
3. A mild form of inflammation, caused by staphylococcus pyogenes or epidermis albus, or in certain instances by the staphylococcus pyogenes citreus.
4. Slowly progressing inflammation, in which the ordinary pyogenic cocci were not found; such as cold abscesses and buboes.
5. Inflammation in which the bacteria which caused the original infection had been replaced by other bacteria; particularly by the bacillus pyocyaneus and the bacteria of decomposition.

The inflammations of these groups call for different treatment. The acute streptococcus inflammations should have early and extensive incisions, packing of the wounds, and continual moist dressing. The staphylococcus pyogenes aureus inflammations call for similar, but somewhat less vigorous, treatment.

The inflammations caused by the white and lemon-colored staphylococci need only small incision, and wounds which contain only these cocci are favorable ones for secondary suture.

Abscesses which contain no pyogenic cocci (such as tubercular abscess and buboes) should not be so opened and dressed as to allow the entrance of these cocci; aspiration and injection of a ten-per-cent mixture of iodoform in vaseline is frequently good treatment for them.

Cleansing of the wounds and the application of non-irritating absorbent dressings, are the means to be used against the bacilli pyocyanii and the bacteria of decomposition.

In a large proportion of cases the bacterial examination can be made in time to guide the treatment; in very many cases, however, the characteristics of the inflamma-

tions are sufficiently well marked to make this unnecessary.

It is to be remembered that bacteria of the same species show marked variations in virulence, and that those of slight virulence do not always show plainly the peculiarities which characterize the virulent ones.

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METHODS OF ESTIMATING THE HEIGHT FROM PARTS OF THE SKELETON.[1]

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THIS is an anatomical problem which of late has been coming into more and more prominent notice, and is applied both to the determination of the heights of extinct tribes and nations of which the skeletons have been found, and also to the identification of individuals. It is evident that the process is not necessarily the same for these two purposes. In the case of races individual peculiarities are of little account, and reliance may be placed upon averages. This cannot be done when the question is of the identification of a certain skeleton.

The purpose of this paper is chiefly to discuss the methods to be used for single cases, more particularly in medico-legal practice.

The process of estimating the height from the more or less detached pieces of the skeleton may be done according to either of two very different plans, which under certain circumstances may be profitably combined. These plans are the anatomical and the mathematical. The former consists simply in putting the bones together, in reproducing the curves of the spine, in making due allowance for the soft parts, and in measuring the height.

In an essay on the "Identification of the Human Skeleton," published in 1878, I gave certain rules for this process. Since then I have endeavored to perfect them, and by means of many measurements have obtained original data for disputed points. I have also studied individual variations to ascertain what weight should be given to them.

The first step in what I call the anatomical method is to place the spine correctly, which had best be done by putting the vertebræ, supposing them to be completely separate, in a bed of clay or of putty which will admit of their being moved until properly adjusted.

Three points call for consideration—the amount of cartilage to be represented in each region, the proportions of the different regions, and the curves; but in practice the first two are closely connected. Instead, therefore, of giving the statements of the amount of gristle to be represented in each region, I should proceed to give each region the proper proportionate length according to my measurements. I have made measurements following the curve of the spine from the atlas to the promontory on fifty male and on twenty-three female subjects with the following results, showing both the actual length of these regions and their percentages, the movable part of the spine being reckoned as 100.

	Male. Ctm.	Per cent.	Female. Ctm.	Per cent.
Cervical.....	13.3	21.5	12.1	21.2
Thoracic[1].....	28.7	46.3	26.5	46.1
Lumbar.....	19.9	32.2	18.7	32.7
Total.....	61.9	100.0	57.4	100.0

It is interesting to compare these results with those of others. Ravenel measured the spines of eleven men and eleven women and Aeby of eight men and eight women. Combining their results we have for nineteen of each sex the following proportions:

	Male.	Female.
Cervical.....	21.7	21.7
Thoracic.....	46.7	46.5
Lumbar.....	31.4	32.4
Total.....	99.8	100.6

In my measurements, as well as in these, the disks at the junction of two regions are reckoned with the upper one. It appears from this, and especially from my figures, that these proportions are essentially the same in the two sexes, though I agree with other authorities in finding the lumbar region a little longer in woman, relatively. It is clear that if the vertebræ are arranged so as to make the regions correspond to these proportions, the more intricate question of the amount of gristle belonging to each will take care of itself. The question of the curves is more difficult, and one which does not admit of a definite solution, for the reason that they vary in young people, at all events, with the time of day, and in all, except, perhaps, the very old, with the position of the body. Individual variations are also endless. It might be of use to follow Humphry's suggestion that a line dropped from the middle of the odontoid passes through the middle of the body of the second and twelfth thoracic vertebræ and through the anterior inferior edge of the fifth lumbar. Should a few vertebræ be wanting this system of proportions is all the more valuable. In case of an extra vertebra, which most frequently occurs in the lumbar region, I have found that the whole length of the spine is not necessarily increased beyond the average, nor always longer in proportion to the height, but that the proportion of the lumbar region is invariably so. In cases of only eleven thoracic vertebræ it is presumable that the thoracic region is short, but though I have several such specimens in my collection, unfortunately I have no measurements taken when the parts were fresh. I have records of a female spine with thirteen thoracic vertebræ in which the percentages were: cervical, 19.9; thoracic, 50.6; lumbar, 29.4; the length being 61.6 ctm., very long for a woman.

If it be asked whether anomalies of number in the spine are sufficiently numerous to be taken into account, I would say that in so far as this affects the proportion of the spine to the height it shall be considered later, that as far as it concerns putting the bones together it obliges the expert to disregard the arbitrary rules of proportions and to arrange the vertebræ as best he can. If there are no complications he should find this no insuperable difficulty.

It is to be observed that I disregard entirely the lower portion of the spine, as it is very liable to vary and has, moreover, no influence on the height.

The spine being settled, the next step is to put it on the pelvis. Of course the inclination of the latter has a great influence on the height, and unfortunately this is just the point which is most difficult to settle. As I stated in 1878, what Hermann von Meyer calls the nor-

[1] Read before the Association of American Anatomists at Washington, May 31, 1894.

[1] In accordance with a vote of the Association of American Anatomists, I have adopted the term "thoracic" in place of "dorsal."

mal conjugata is probably a more trustworthy guide than the conventional angle. This is a line passing from the top of the symphysis to the middle of the third sacral vertebra, on which a transverse line can usually be seen. This imaginary line forms an angle of thirty degrees with the horizon. We may, moreover, strive to make the notch of the acetabulum look directly downward and to bring the anterior superior spines of the ilia into the same vertical plane as the spines of the pubes. Nevertheless, many pelves will occur, especially those of which the first vertebra is transitional, for which the anatomist must rely on his general knowledge and good judgment rather than on rule.

The pelvis being then in place, the bones of the leg are to be added and due allowance made for the soft parts. In putting the thigh-bone into the socket care must be taken that it does not touch the upper border, from which it is separated by cartilage. The lateral inclination must also be borne in mind—in other words, the condyles must rest on a level. The very slight antero-posterior slant may be disregarded.

At the knee about 6 mm. may be added and about as much more for the two joints of the ankle. The addition of 12 mm. for the soft parts of the sole of the foot is not far off, though of course it is liable to variation. The skull is then to be placed, allowing 3 mm. for the joint between it and the spine, and about six for the scalp. According to Topinard 35 mm. are to be added to the skeleton for all these soft parts, a statement not materially different from mine. It is probably equally correct.

I shall now consider the application of the mathematical method, and later, cases in which the two may be profitably combined. The mathematical method rests on the proportion of certain bones to the height, and it is obvious that even if these proportions were collected from thousands of specimens, as Manouvrier remarks, these would give us no certainty. There are persons with short legs and persons with long legs, and therefore no single rule of proportion can be true for both. This method, therefore, is to be used when we can do no better. I shall show later what the possible error amounts to.

In medico-legal works some very insufficient tables are still quoted; but of late years this matter has received particular attention, especially in France, which has at last set this department of science on a comparatively stable basis. Three observers especially concern us. They are Topinard, Rollet, and Manouvrier.

Topinard calculates proportions based on observations giving the following ratios of certain bones to the height = 100: humerus, 20; radius, 14.3; femur, 27.3; tibia, 22.1. Thus, knowing the length of one of these bones, we have only to multiply it by 100, and divide it by the corresponding ratio. This should give the height of the skeleton, to which he adds 3.5 ctm. for the soft parts.

Rollet went further. He measured fifty male and fifty female bodies before dissection and measured the three long bones of each arm and leg. He then constructed tables, reckoned proportions, and gave five different methods of finding the height. Any one of the six chief long bones may be used, or the average result of calculation from each. His favorite method is by means of tables, one for each sex, and a simple rule of three. He proceeds thus: the length (L) of a bone being known, we find the length of the bone nearest to it in the table (B) and the average height (H) corresponding to B. Then we know that as $B : L = H : X$ or $X = \frac{LXH}{B}$.

He gives also a rapid method, which consists simply in multiplying the length of the bones by certain numbers. Thus multiplying the male humerus by 5.06, the female by 5.22, the radius by 6 86 or 7.16, the femur by 3.66 or 3.71, the tibia by 4.53 or 4.61, gives the person's height in centimetres.

The most recent paper is that of Manouvrier. He criticised Rollet's tables because of his hundred subjects fifty-one were sixty years or more. Their spines, therefore, had probably become shorter than normal, thus injuring their proportions. He formed, therefore, new tables from Rollet's by rejecting these fifty-one senile cases, which happily were divided as evenly as possible between the sexes, and by rearranging the tables so as to make the scale of the length of each bone the basis of calculation instead of the scale of the heights; obviously the proper course. He, moreover, measured the femur in its normal position instead of taking its greatest length, as Rollet, following Topinard, had done. Further, as these bones had been measured when fresh, he pointed out that in the case of dry bones 2 mm. should be added to their length. Finally, he claims that as the recumbent body, and the dead body presumably still more, gains in length, at least 2 ctm. should be deducted from the result in calculating the height of the living person. His method was then to look for the length of the known bone in his tables which gave the corresponding height. If the precise length was not there, to find its distance from the nearest and to make a suitable allowance in the height. Such is the mathematical method as applied to the long bones.

In a previous paper I attempted to find the ratio of the length of the sternum, excluding the ensiform cartilage, to the height of the body. My measurements embraced seventy men and thirty-nine women. I found that the average ratio in men was 9.65 per cent. By subdividing this set into groups I found that in the shortest men the sternum was relatively a little longer and in the tallest a little shorter, but the extreme variations of groups (not of individuals) was only from 9.56 per cent. to 9 98 per cent. The average of the thirty-nine women was 9.22 per cent. After the exclusion of a small number of cases the range of variation was remarkably small. Since then I have observations on seventy-nine men and thirty-one women which bring the totals to one hundred and forty-nine men and seventy women. The total average is 9.59 per cent. for the men and 9.08 per cent. for the women, showing that on the average the male sternum is distinctly longer relatively to the height. None the less this cannot be commended as a method of estimating the height in individual cases. The obvious reason is the very common occurrence of very peculiar sterna. It is one of the least stable parts of the skeleton. While I believe that a typical sternum has a fairly constant ratio to the height in each sex, variations are so numerous that this method must be discarded.

I have added a new method of my own, namely, the estimation of the height from the length of the spine measured in a straight line from the top of the atlas to the promontory of the sacrum, thus excluding the most variable regions, the sacral and coccygeal. The tables which I have used were constructed from measurements of fifty-six male and twenty-one female spines made after the completion of dissection, the basis being, according to Manouvrier's plan, the length of the spines, not the scale of heights. Instead of dividing the number of observations into equal parts, I have thought it better to arrange them in groups containing all the observations of every 3 ctm. Thus my fifty six male spines comprised three of less than 57 ctm. (the shortest being 56.4), fourteen from 57 to 60, twenty-four from 60 to 63, twelve from 63 to 66, and three longer ones (the longest being 69.8). I then reckoned the average ratio of each group to the height and found the coefficient by which to multiply any spine falling within any group. It is evident that this method, while giving very good data for the lengths represented by large groups, must be of little value for the extremes, represented by few bones. Still it seems to me more trustworthy on the whole than the plan of dividing the fifty-six spines into four groups of fourteen or into eight groups of seven. It makes all but the extreme groups more homogeneous. The weakness of these may be frankly admitted. As to the age of the subjects, several old ones have been admitted, thus twenty among the males were sixty or more and seven

among the women. Here I give simply the coefficients by which to multiply the length of spine. All that is needed is to find the group in which it belongs and multiply by the given coefficient.

Males.		Female.	
Length of Spine	Coefficient.	Length of Spine	Coefficient.
Under 57 ctm	2.93	Under 54 ctm	2.94
From 57 to 60	2.84	From 54 to 57	2.82
From 60 to 63	2.78	From 57 to 60	2.79
From 63 to 66	2.79	Above 60	2.76
Above 66	2.65		

As the spines grow longer the coefficient decreases, excepting that in the male table it is practically the same for two groups.

For several years it has been my custom to measure the height and certain other dimensions of subjects before dissection, and later to measure the length of humerus, radius, femur, and tibia, and that of the spine both in a straight line and following the curves. Anyone who has had experience in the dissecting-room will understand that for various reasons I often did not get all these measurements on both sides, nor of all these bones. Instead of constructing new tables of my own for the long bones I have chosen twenty male and twenty female subjects, with few exceptions under sixty years old. In all every humerus, radius, femur, and tibia had been measured on both sides and the average length taken as a starting-point. From this the height has been calculated from every one of the four bones and the average of the four results taken as the answer, according to the methods of Topinard, Rollet, and Manouvrier successively.

I have added in using Topinard's method the 3 5 ctm. which it requires. Perhaps I have been somewhat unjust to Rollet by using his rapid method instead of the one which is his first choice, but as presumably Manouvrier's modifications of Rollet's tables must be considered an improvement, the method I have followed permits us to judge whether this more complicated process, for which tables are necessary, has any marked advantage over Rollet's very simple rapid one.

I do not find any striking difference between the value of humerus, radius, femur, and tibia as a basis of calculation. Naturally, as I believe Manouvrier remarks, we should choose the longer bones as having the smaller coefficients by which therefore any error is multiplied a smaller number of times than if the bones were shorter and the coefficient larger.

Male.

No.	Age.	Height.	Topinard.	Error.	Rollet.	Error.	Manouvrier.	Error.	Spine.	Error.
4	49	170.9	157.7	—3.2	153.9	—7.0	160.3	—0.6		
754	30	161.2	158.8	—2.4	154.9	—6.3	160.9	—0.3	170.1	+8.9
470	55	162.0	163.7	+1.7	159.6	—2.4	163.8	—1.8		
100	31	163.5	165.0	+1.5	161.1	—2.4	164.6	+1.1	161.8	—1.7
71	22	163.6	161.3	—2.3	157.5	—6.1	162.5	—1.1	167.5	+3.9
767	51	168.4	175.2	+6.8	172.1	+3.7	169.9	+1.5	165.8	—2.6
580	36	169.0	172.0	+3.0	167.9	—1.1	167.7	—1.3	167.2	—1.8
556	37	169.1	171.7	+2.6	167.8	—1.3	167.2	—1.9		
15	67	169.2	172.2	+3.0	168.3	—0.9	167.7	—1.5	164.7	—4.5
A9	54	172.1	173.1	+1.0	169.3	—2.8	168.1	—4.0	169.5	—2.6
A11	22?	172.6	175.1	+2.5	171.3	—1.3	168.1	—4.5	168.6	—4.0
747	56	172.6	174.5	+1.9	170.6	—2.0	168.8	—3.8	173.7	+1.1
A1	40	173.1	174.8	+1.7	171.0	—2.1	169.2	—3.9	175.7	+2.6
557	37	174.4	174.3	—0.1	170.4	—4.0	168.7	—5.7	174.3	—0.1
581	34	174.9	175.8	+0.9	172.0	—2.9	168.5	—6.4	168.7	—6.2
653	24	178.0	167.9	—10.1	164.9	—13.1	166.1	—11.9	168.7	—9.3
755	42	181.3	176.3	—5.0	172.5	—8.8	170.0	—11.3	175.9	—5.4
11	38	185.7	183.2	—2.5	179.3	—6.5	175.1	—10.6	179.9	—5.8
547	47	188.2	185.6	—2.6	187.8	—0.4	177.0	—11.2	161.3	—6.9
536	68	191.5	199.0	+8.5	195.0	+3.5	188.3	—3.2	183.1	—8.4
Average error				3.16		3.93		4.38		4.45

N.B.—The numbers in the first column are solely for the identification of the body in my notes.

	Topinard.	Rollet.	Manouvrier.	Spine.
Number of errors not over 1 ctm	3	2	2	1
Total number not over 2.5 ctm	11	9	9	4
Errors from 2.5 to 5 ctm	6	5	5	6
Errors above 5 ctm	3	6	6	7

Female.

No.	Age.	Height.	Topinard.	Error.	Rollet.	Error.	Manouvrier.	Error.	Spine.	Error.
2	60	149.9	140.2	—8.8	140.1	—8.9	154.4	+4.6	152.9	+3.0
83	20	151.0	148.6	—2.4	148.6	—2.4	151.7	+0.7	152.2	+1.2
C8	63	152.2	154.6	+2.4	154.8	+2.6	155.7	+3.5	150.8	—1.4
21	23	154.4	145.3	—9.1	145.2	—9.2	148.8	—5.6	153.9	+4.5
471	33	155.0	158.1	+3.1	158.2	+3.2	157.0	+2.0		
729	26	155.7	154.2	—1.5	153.6	—2.1	155.6	—0.1	155.9	+0.2
566	41	156.2	157.8	+1.6	158.2	+2.0	157.5	+1.3	158.2	+2.0
746	23	156.3	154.9	—1.4	155.2	—1.1	155.7	—0.6	156.5	+0.2
463	51	156.6	163.7	+7.1	164.1	+7.5	160.5	+3.9	153.6	—3.0
450	51	157.1	160.8	+3.7	161.1	+4.0	158.2	+1.1	156.7	—0.4
A6	41	158.7	155.0	—3.7	155.3	—3.4	156.1	—2.6	159.5	+0.8
733	19	159.0	146.4	—12.6	149.4	—12.6	149.3	—9.7	166.8	+7.8
583	30	160.0	155.7	—4.3	156.2	—3.8	156.1	—3.9	159.3	—0.7
565	31	160.8	156.9	—3.9	157.1	—3.7	156.9	—3.9	157.9	—2.9
646	31 or 32	161.9	166.9	+5.0	168.3	+6.4	163.0	+1.1	159.0	—2.9
481	50	162.9	157.9	—5.0	159.0	—3.9	157.8	—5.1		
111	24	163.8	159.4	—4.4	159.4	—4.4	158.4	—5.4	160.4	—3.4
12	55	165.3	164.9	—0.4	165.4	+0.1	161.2	—4.1	166.9	+1.6
619	20	168.0	164.1	—3.9	164.6	—3.4	163.3	—4.7	166.4	—1.6
563	26	171.2	164.6	—6.6	164.9	—6.3	161.2	—10.0		
Average error				4.54		4.55		3.69		2.21

	Topinard.	Rollet.	Manouvrier.	Spine.
Number of errors not over 1 ctm	1	..	2	3
Total number not over 2.5 ctm	6	5	7	10
Errors from 2.5 to 5 ctm	9	9	8	6
Errors above 5 ctm	5	6	5	1

In seventeen of each sex I have also the length of the spine. The tables are arranged according to heights. After each column is one of errors, showing whether the result was too great or too little. It is evident that the errors on the minus side very much predominate, the exceptions being by Topinard's method and by the spine in the male table. It is also seen at a glance that the worst results by all methods, and especially by that of the spine, are in the male table. The summing up at the foot of the tables is particularly instructive and curious. It shows that for the males, if we take the average error as the criterion, the methods rank in order of merit as follows: Topinard, Rollet, Manouvrier, spine; for the women the order is spine first, Manouvrier second, Topinard and Rollet practically even for third place. If we judge by the number of results within 2.5 ctm. the standing is materially the same. Comparing the results of the two tables, Topinard's method seems the best. In seventeen of forty cases his error is less than 2.5 ctm., and in thirty-two not over 5 ctm. There is little to choose between Rollet and Manouvrier, but as the latter's results for the most part err by defect I should not deduct 2 ctm. to make up for lengthening in the recumbent position.

On the whole it seems that in about one quarter of the cases the error is likely to exceed 5 ctm. or two inches. Conversely that in three-quarters of the cases it is possible to reckon the height reasonably closely. When we consider that the height is a variable quantity at different times of day and according to position, that moreover the accurate height of comparatively few people is known, we must feel that to come within one inch (as occurs in about one-half the cases) is very satisfactory, and within two inches is not bad. The fact must be frankly admitted, however, that a greater error than two inches is bad, and that this occurs about once in four times.

In studying the tables we find that the error from the spine is by no means always on the opposite side from the error from the long bones, as one would expect. In one case (653) the error by every method is very considerable, and all are by defect. I can only suggest by way of explanation (the possibility of some blunder being always admitted) that there may have been uncommon thickness of the soft parts, a large head, and great inclination of the pelvis. After writing these words I find in point of fact that the top of the trochanter is on the average of the two sides about 9 ctm. above the symphysis. This seems incredible; but an error in transcribing

these figures before dissection could have no connection with the subsequent measurements. I am inclined to believe, therefore, that the subject must have been a peculiar one. In some cases in these tables all the results are wonderfully concurrent, thus on a man (100, aged 31) the errors of the four results range from 2.4 ctm. to 1.5 and in a woman (746, aged 23) from 1.4 ctm. to 0.2.

As to whether the occurrence of anomalies of number of the vertebræ is so frequent as to throw discredit on the spine as a basis of calculation, the reply is somewhat uncertain. Since I have looked for such anomalies I have found them with a frequency which is surprising, though I am not able to express it in figures. I question, however, whether they give rise to any greater variation than comes from the uncertain length of the legs.

We have now to consider cases in which certain parts are wanting by supplying which we should be able not to rely solely on proportions. Let us suppose that the pelvis is wanting, or so shattered as to be useless, though we have both the legs and the spine. The problem is evidently how high to place the promontory above the trochanters. The height of the promontory above the symphysis is often stated as from about 3½ to 4 inches (say from 9 to 10 ctm.). This, I believe, came originally from Naegele's statement that in well-formed women it is about 3¾ inches. From my own observations I should give the distance at about 9.5 ctm for man and 10.5 ctm. for woman. We need, therefore, to know the relation of the height of the symphysis to that of the great trochanter. I find from measurements before dissection from 118 male and 37 female white bodies that in the males the trochanter is on the average 1.1 ctm. higher than the symphysis, and 3 mm. in females. Having in view the greater height of the promontory above the symphysis in women, we may without serious error reckon that the promontory is 10.5 ctm. above the trochanter in either sex.

Topinard [1] gives provisionally the following distances on a vertical line of landmarks above the hip in the male of medium height: From the anterior superior spine of the ilium to the head of the femur, 6 ctm.; from the head to the greater trochanter, 2 ctm.; thence to the pubes, 2 cm.

In certain cases we may have recourse to the proportionate height of the symphysis, which is admittedly not far from the middle in both sexes, although there are differences of opinion on certain points, as in particularly tall or short persons. From dissecting-room measurements of 110 males and 32 females I find that the pubic height equals in men 51.4 per cent., and in women 50.3 per cent.; the differences obtained by dividing like measurements of each sex into a longer and shorter half were absolutely insignificant, none reaching a half of one per cent. None the less I should esteem this proportion of most value in medium heights. Quetelet, it may be mentioned, puts the pubic height at .508 of the whole in man, and .498 in woman. Practically, considering the vagueness of the height and the insignificance of one-thousandth of it, we may for persons of medium height call the symphysis the middle point in women and a little (say 1 ctm.) above it in men.

Should the head be wanting we must make a suitable addition to the height of the spine. Sappey gives 13 3 ctm. as the average male height from the front of the foramen magnum to the vertex of the skull, and 12.5 ctm. for the female. To this 1 ctm. more should be added for the space between the top of the spine and the border of the foramen magnum and for the scalp, reckoned together.

Perhaps it might be useful to remember that the top of the spine is on a level with the anterior nasal spine and with the lower border of the auditory meatus.

Should the foot be wanting we might add for astragalus, os calcis, and soft parts 9 ctm. for man, and 8 ctm. for woman. I cannot, however, claim any great accuracy for this procedure.

[1] L'Anthropologie, fourth edition, 1884, p. 341.

By these methods it is, I believe, possible to estimate the height to within 5 ctm. in three-quarters of the cases when it is done solely by the method of proportions. When the most important parts of the skeleton are present there seems no reason why the error should ever reach that amount. Indeed the only reason why so large a margin should be allowed is the difficulty of knowing what the true height may have been, and the further fact that as it is not a constant quantity, it never can be known certainly.

CRIMINAL PSYCHOLOGY.

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In an article which appeared in the MEDICAL RECORD, January 13th, entitled "Criminal Anthropology," I showed by photographs and original sketches that the criminal was, anatomically and physiologically, an abnormal man, and also that he was, unquestionably, an atavism. With the permission of the reader I will quote some of the closing sentences of the above-mentioned article, and they shall form the text from which the present paper will be elaborated. "Atavism has hurled him" (the congenital criminal) "back thousands of years, and has placed him beside his pithecoid ancestor. He is a savage in the midst of civilization. His customs and desires, his responsibilities and religion are those of a savage, born and dead centuries and decades of centuries ago. . . . Poor unfortunates! Are they to be held responsible for Nature's vagaries? Enlightened humanity has a difficult problem to solve when asked the question, 'What will you do with the criminal?'" Ethics, concrete and abstract, are the result of psychical evolution. Abstract ethics, pure and refined, have reached a high point in civilized man, while concrete ethics, ethics necessary for the preservation of species living in communities (social law), have reached an equally high point among savages, and some of the lower animals, *e.g.*, the social hymenoptera and some of the birds and mammals. Most savages are purely animal in their natures, and have none of the refined psychical emotions which ennoble the possessor of abstract ethics, civilized man. Parental love, conjugal affection, fraternal love such as civilized man experiences, are unknown to the savage. Even the love of God is, with him, material and concrete. The love of the beautiful in Nature is, in the savage entirely absent, or, if present at all, it is only so in its material sense. His love of the beautiful (ornament) is rude and uncultivated, and, in its gratification he scarcely excels the rude decorative attempts of some of the lower animals, *e.g.*, the bower-bird, humming-bird, spider, etc. His æstheticism is coarse and unrefined, and, in truth, is not elevated above his gross animal desires. His drama, his poetry, and his art appeal to his carnal nature. He is essentially an animal devoid of every refined psychical emotion. I hold that the congenital criminal not only resembles the savage anatomically and physiologically, but that, psychically, the savage is also his archetype. It will be necessary, in order to prove this, to discuss the ethics and æsthetics of savages and compare them with the ethics and æsthetics of congenital criminals. Personally I am not acquainted with the psychology of the savage except for that knowledge derived from reading the observations of others, but with the psychology of the criminal I am thoroughly conversant, having lived with him in two of the largest cities in the United States.

In the following description of the savage and his habits, I have borrowed freely from the works of Hall, De Quatrefages, Nares, Lubbock, Markham, Lyons, Ross, Reclus, Day, and Bancroft. I will not, however, distract the reader's attention by sprinkling my text with references. The Eskimos or Inoits are a primitive race inhabiting the most northerly habitable portions of the globe; and it was in these people, before contact with civ-

ilized man had contaminated them, that we found evidences of concrete ethics and æsthetics, such as we have every reason to believe existed in all primitive races of men at, or, a short time after, the inception of psychical evolution. The Inoit habitation is communal; a whole community may dwell in one house. The central part of this house, where the ever-burning lamp is placed, is common to all. Cords are stretched across the other portions of the house dividing it into imaginary stalls or boxes, and these stalls are occupied by one or more families. There is no other fire save that of the lamp, which serves to melt the ice and snow for drinking-water. There is an utter absence of that which we term modesty. The inhabitants of the "kachim," owing to the great heat generated by so many bodies in one small room, strip off their clothes and go about entirely naked. "There is no natural want or physiological function which they hesitate about satisfying in public." They are dirty, squalid, ill smelling. They are unwashed, though fond of the vapor-bath; this they indulge in for the same reason that hogs will indulge in mud baths, for the gratification it affords. They sometimes bathe their faces in decomposed urine, but this they do for a religious, or, rather medico-religious fetisch, for they regard the bladder as the seat of the soul. The use of urine as an emollescent and a medicine is almost universal among savage races. The Wahabis and Ugoyos of East Africa, the Banians of the Momba, the Chewsures of the Caucasus, the Silesians, the Bedouins, and the Arabs all use it. Even in France and Spain it is used by certain people as an emollescent and a dentifrice. We will see, at the proper time, what a prominent place it occupies in the materia medica of the congenital criminal.

"In Aleutia those most nearly related to each other contract a union, the brother with the sister, and sometimes the father with the daughter." Langsdorf reproached an Aleutian for so doing; he replied, "Why not? the otters do it!" Between husband and wife there is no conjugal affection. They are not at all jealous. The Aleutian offers his wife to the guest as freely as he offers the chunk of seal-blubber. His friends are welcome to enjoy her if they are married and are in a position to return the favor. Immoral! Wrong! Not a bit of it. Remember that these people are mere animals and have no knowledge of abstract ethics; they see nothing wrong in a woman declaring that one husband is not enough for her. It used to be the custom in Florence for the women to demand in their marriage contracts the right to take a lover. The Aleutian girls, enjoying full liberty during their girlhood, demand at their espousals the right of the *cicisbeat*. During the absence of the legitimate husband the *cicisbeo* takes his place. Brothers frequently marry the same woman; in fact, among the Thlinkets and Koloshes, adelphogamy is the rule. The Nair girl calls in any man who is convenient and complaisant, who goes through the marriage ceremony with her, and places the *tali*, the Hindu equivalent of our wedding-ring, round her neck. He is feasted, and then politely shown the door. The wife is then at liberty to receive as many other men as she sees fit, but the husband—never! That would be disgraceful and highly immoral.

I might enumerate hundreds of kindred customs and habits in savage races, but do not consider it necessary; I merely wish to establish the fact that conjugal affection does not exist among savages. The savage mother has the same affection for her offspring as the cat or the dog has for hers. She attends to it just as long as it is helpless, "but as soon as it is able to look into the pot standing erect, she leaves it to itself and seems to forget all about it." Where polyandry exists it is not reasonable to expect that the man has any regard whatever for the children of his wife. This is true also where polyandry and polygamy exist combined together. In his poetry and his drama, and the savage is a born poet and actor, the savage depicts the scenes of his every day life. The events of the hunt, in the field or on the flood, are recited or acted with wonderful realism. Love enters into a number of their poems, but it is an intensely sensual love, a carnal and an animal love. Rapine, lust, and feasting go hand in hand, and tread the measures of every savage dance together.

The savage is a creature of to-day; he lets to morrow take care of itself. When there is plenty, he gorges himself with food to repletion; when there is nothing to eat, he fasts with stoical equanimity. Says Captain Lyons: "Knillitleuk had already eaten until he was half seas over. He was dropping asleep, with a red and burning face and open mouth. His wife was cramming him, stuffing bits of half-boiled meat down his throat with the help of her first finger, steering clear of his lips. She carefully watched the process of deglutition, and immediately filled up any void that might appear in the orifice with a stopper of raw fat. The happy man did not stir; he moved nothing but his molars, chewing slowly, and not even opening his eyes. From time to time a stifled sound escaped him, a grunt of satisfaction." The Mescalero Apaches tighten their belts around their empty stomachs and go in quest of prey, nothing, in the shape of an animal, comes amiss to them as food while out on a marauding expedition. Grasshoppers, lizards, snakes, a chance bird, anything is eagerly devoured in order to sustain life until they can make a grand *coup* on some unguarded ranch. At the right moment they rush in, kill the men, and carry off the women, children, horses, and mules. They then turn and strike a bee line for home, driving their captives before them, nor do they halt until they have regained their encampment, where they are received with yells of welcome. Immediately a bacchanalian orgy of feasting begins. A horse is knocked on the head and devoured before his flesh has ceased to quiver; nor do they stop for cooking until the edge of their hunger has been considerably blunted.

The savage is essentially a believer in witchcraft, and most of them are devil-worshippers. They are intensely superstitious, and see in every event of nature wonderful auguries and prophetical signs.

Among the Inoits and kindred races individual property does not exist. All things are held in common. When these people visited a ship for the first time, they picked up anything which pleased their fancy. They did not consider it stealing. "A man cannot steal from himself," said an Aleut; "what is yours is mine, and what is mine is yours. The Great Mother has given to all alike."

So much for the savage; now let us consider his congener, the congenital criminal, who, to a certain extent, is modified by his surroundings. When Marco Polo wrote his celebrated work people considered him a romancer. When an Indian returns to his tribe after a visit to Washington and relates to his brethren the wonders he has seen in his travels, they move their hands before their mouths and shake their heads. Deaf mutes make the same signs when they wish to express incredulity.

I expect that some of my readers will consider me a second Marco Polo, and will treat me with the same scant ceremony that the unsophisticated Indians bestow upon their travelled brother; yet I assure them, in advance, that the following history of the criminal is true in every particular. Men are prone to disbelieve because they cannot see the wound in the side with their own eyes, and cannot place the tips of their fingers in the punctured palms. St. Thomas was only intensely human, and I do not, therefore, have the poor opinion of him which most people have. Man is a veritable *terra incognita* to most men, though they do not know it, and when an observer tells them that he has discovered something new about man, doubting Thomases spring up everywhere. I only ask such critics to live as I have lived, with and among criminals, and they will soon cease to be infidels. I cannot be elaborate in a non-technical article, neither can I go into certain details without giving offence, but, stripped of unnecessary verbiage and absolutely devoid of all false sentiment, the following history is but a plain nar-

rative of the ethics and æsthetics of the criminal, revealed to me by a personal and intimate acquaintance with him in his daily life. Those in authority, whose duty it is to watch and guard against the criminal, will tell you that criminals herd together, and during my intercourse with them I always found them living in circumscribed communities. Remember always that in this paper I am speaking of the congenital criminal and not the professional criminal, nor the occasional criminal. Let me say, also, that the so-called "tough" is not usually a congenital criminal. The tough will fight and will commit other anti-social acts; he will even commit murder, but he is generally incited thereto by whiskey or by passion. He never commits murder for the sake of personal benefit like the congenital criminal. He is not an habitual thief, nor is he ever guilty of incestuous acts; moreover, the tough will work, but the congenital criminal never, unless compelled. The tramp is hardly ever a congenital criminal; he is, usually, only an occasional criminal.

Perhaps the reader will be interested in learning how I obtained my passport to thiefdom. I obtained it on one occasion in the following manner: In the first place, I called on the chief of police and explained the object of my researches and my plan of operations. I deemed this necessary, so that if "run in," I might have a friend at court. I then hired a room in an office building and furnished it with a desk and some chairs, and for several days, lounged about the low saloons in the poorest and most criminal section of the city. I saw any number of criminals, but bided my time; I was looking for a typical criminal, a chief in his tribe. I seldom or never make a mistake in my diagnosis of criminality, and so soon found the very man for whom I was looking. A few drinks of "red eye" and several "rum bolers," made him companionable. I explained to him that I had come to the city from an inland town where I had barely escaped being "pinched" for "flim-flamming;" that I knew where a "trick could be turned" in the city if I had some one to help me. He readily agreed to furnish the tools and render me all the help necessary for half the "boodle," so I deliberately planned with him to rob my own room. I had placed in the desk in this room twenty five dollars, and to make a long story short, I assisted him in burglarizing my own room and in robbing myself. We divided the money, and he, as I expected, then invited me to go with him to his "mot cab," *i. e.*, woman's room. It was here that I made the acquaintance of the congenital criminal. This colony of criminals numbered about two hundred, and were herded together—men, women, and children—in two small tenements. Sometimes a dozen men, women, and children would be found occupying one small room. No modesty was observed by these people. A tub or bucket did duty as a necessary, and the calls of nature were attended to publicly. As it was summer, and the weather very warm, these people stripped themselves naked when in their rooms, the younger ones even running about the house and into the courts entirely nude. The women had their favorite "cully," but almost everyone of them practised polyandry. Some of them did this secretly, but most of them were open in their adultery, and the men were fully aware of the fact. Prostitution was a source of revenue in which the putative husband shared without any shame or compunctions of conscience. He only grumbled when his "mot" did not bring in much money. In this colony I saw two examples of incest, one a father living with his daughter, and another, a brother living with his sister. There were probably many more instances, but they were cursory and did not attract my attention. These people were fully aware of the fact that these acts were considered criminal by people not belonging to their tribe, and that they would be punished if apprehended. They had nothing to fear, however, from their associates, for, like the Aleutians, they saw nothing wrong in it. "Why not? the otters do it!" When the head of the family goes off on a marauding expedition, and he is frequently absent for weeks at a time, he leaves his partner in charge of the family. This man is the *cicisbeo* of the woman, and during the absence of the husband fulfils all of his duties. These men are true savages in the treatment of their women; they beat and maltreat them on all occasions, and almost every woman in the colony bore the marks of her "cully's" brutality. Here, also, I saw many instances of sexual perversion. These disgusting performances cannot be described or even hinted at. Suffice it to say that the religio sexual abominations of the Aleutians have their autotypes among their civilized (so called) congeners. The girls become prostitutes early in life. They are nominally match sellers or flower-venders, and do a thriving trade among the brokers and various agents, etc., who have their offices down in the city. One little girl, not ten years old, showed me a twenty-dollar gold-piece which she declared had been given her by a certain "grave and reverend seignior," high up in banking circles. The money which these precocious little sinners (ought I to call them sinners? I am convinced that they do not consider themselves such), take in is given to their mothers. When these girls arrive at a marriageable age, say from fourteen to eighteen years, they "take up" with some man in the colony and become his "mot," or woman. The boys are thieves from earliest childhood. They sometimes sell newspapers, but do this merely to mask their real business, which is pocket-picking. When older they become sneak-thieves, thugs, and burglars. The criminal, like the savage, is improvident and wasteful. When he has made a successful haul he lives on the fat of the land. The "growler" fairly smokes, it is "rushed" so rapidly. The pots and kettles in the scantily furnished kitchen corner are filled to overflowing. The women are all engaged in rude cookery, while the men prepare for the coming feast by stimulating their stomachs with numerous potations. The dinner is served and all fall to, like veritable savages as they are, and eat and drink until slumber overtakes them. The criminal delights in bright colors and tawdry jewelry. His æstheticism, like that of the savage, is rude and uncultivated. He will cover his fingers with enormous rings, and will wear cravats and handkerchiefs of the most pronounced colors; he does this, however, when on dress parade. When on business bent, like the savage, he, almost literally strips himself to his breech-clout; he does not care to have his movements hampered by "bum togs" when he is about to "crack a box." He is filthy and uncleanly in his habits; he never bathes from one year's end to another. Parasites swarm on his person, and the odor of his body is rank and animal-like. His knowledge of medicine and the kindred sciences is crude and savage. Incantations, sorceries, and simples (some of the latter are horrible and disgusting compounds) are his materia medica. I accidentally sprained an ankle while with these people, and was treated by an old crone of the colony. She bathed the foot and ankle with decomposed urine, all the while mumbling:

> "From toe to knee, from knee to toe,
> In and about the devils go;
> Chase 'em, liquor, chase 'em fast,
> And from this foot drive 'em at last."

This treatment proved very efficacious, for the pain vanished and the swelling disappeared as if by magic. Urine is a favorite lotion with the congenital criminal. The women use it as a face wash, and the men consider it the best medicine in the world for bruises and contusions.

The congenital criminal has his god, but he is not the God of the Christian. He is the god of luck or chance, and his wishes are consulted and obeyed with as much fidelity by them as are those of the Christian's God by his devotees. Bad Luck is their devil, and he is treated with as much consideration as his antithesis, Good Luck. Here is where the devil-worship of the Aleutian is paralleled. Here we see an evidence of concrete ethics such as we find in all savages; there is no abstract love of God such as civilized Christians feel. The congenital criminal, like the savage, recognizes the good and evil

principles, but he applies them to his personal welfare and not to his spiritual. He is a savage, and the idea of morals has not yet been evolved in his brain.

The savage and the congenital criminal are born poets, and both love a certain kind of play-acting. Like the savage, the criminal likes to witness scenes akin to his every-day life and aspirations, acted on the stage. The border drama, in which there are many murders and much crime, is his great delight. He cares nothing for comedy, unless it is obscene and lasciviously suggestive. He loves music and dancing, but both the music and the dance must be carnally exciting, or he will have none of them. He is a poet, and almost invariably speaks in figurative language; so is, and does, the savage. His poems depict his every-day life, because he is, from the nature of things, essentially a realist. All are familiar with the lucubrations emanating from our jail birds. Most of the poems obtained by myself cannot be printed. Some of them are real poetry, though based on obscene and lascivious topics, and expressed in rude, slangy language. The criminal is an artist also, and his work is strikingly like that of the savage. His drawings are mostly pornographic, depicting men and women in immodest and lascivious attitudes, and according to Mayhew, savages are guilty of the same thing. The congenital criminal is born with his tendency to criminality firmly stamped on his brain; it is an inheritance from his father and his mother. He considers the laws of society to be all wrong; his social laws, *his* ethics, are the only right ones. His logic is all wrong with us, but all right with him. The congenital criminal is a moral imbecile; no amount of punishment will ever evolve in his brain any idea of morality. This is an established fact, and cannot be gainsaid. But he is anti-social, therefore dangerous: what shall we do with him?

PROVISIONAL TREATMENT OF INSANITY.

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I WISH to deny at the outset any intention of assuming a hostile attitude toward the asylum treatment of the insane, or that it is the main purpose of my communication to advocate the home treatment or care of the insane. I preface what I have to say in the above manner in order to escape, if possible, from the imputation, which a hurried reader might charge to me, of being in the main opposed to the asylum treatment of insanity, and in a general way favoring by preference the home treatment of the disease. I do this because experience has taught me that in medical societies or gatherings, where I have thrown out any suggestions along the lines considered in this paper, I have almost invariably been misunderstood by a few at least, if not by the majority. I feel, however, that the subject is one of considerable importance, and even at the risk of being misunderstood I shall venture to express myself upon it.

My principal proposition is that when it is demonstrated in a given case that insanity actually exists, it does not necessarily follow that it is the best practice to immediately send the patient to an asylum. It is the purpose of this paper to present arguments in support of this proposition.

From fifty to seventy five years ago the asylum or madhouse was for the most part a place for the custodial care of violent or dangerous lunatics, and it was rather the exception that the chief officer was a medical man; and if a medical man, it was perhaps a still greater exception if he devoted much time to the actual study of insanity in its varied aspects. Howbeit there were a few conspicuous exceptions, and by way of digression I want to take this occasion to say that we are more indebted to them for the advancement that has been made in the treatment of the insane than we are generally aware of. It was the common practice in those days to leave the care and treatment of the insane in asylums mainly to the attendants, the physician seeing and prescribing for them mainly at the attendant's suggestion; in many instances large quantities of the favorite "sleeping potions" and "quieting draughts" were placed in the hands of attendants with instructions how to use them. As can readily be understood, it generally happened in these times that the attendant really knew much more about the actual problems of treating the insane than the physician, and if he told the physician that this patient needed quieting medicine, and that one must be kept strapped to a chair, and another must be kept locked in his room, his word was law, and said patients were often so treated, not for days and weeks, but continuously for long months and years. But, somewhere about twenty or thirty years ago, resident medical officers more or less generally began to actually make a study of the care and treatment of the insane, until now it is rather the exception for attendants to know more about any part of the treatment of insanity than asylum physicians. Though it would be both instructive and interesting to trace step by step the changes as they have occurred, it may be asserted quite safely that within the above-mentioned time there is no department of medicine in which there has been a more striking metamorphosis or a more practical advancement.

Cases that for years had lived behind bars, in their own filth, having their food passed to them, either in the public jail, public mad houses, or at the house of some relative, under the new order of things in the modern asylum were often, much to the astonishment of their relatives, found in a condition of cleanliness and comparative comfort, successfully employed at some healthful out-door occupation.

To all classes of observers this change appeared quite marvellous, and to none more so than to the general practitioner of medicine, so that he, urged on by the reports of the medical officers of the hospitals for the insane, soon came to adopt the routine practice of promptly sending all patients to an asylum whenever the existence of actual insanity was demonstrated; and on the whole it is probable, if the practitioner had never served on the medical staff of an asylum and thus had an opportunity of gaining a practical acquaintance with insanity, that this was the wisest course for him to pursue. He did not know at all how his patient would be treated when he reached the asylum. He was only thoroughly convinced from his reading and observation that to send the patient to an asylum was the proper thing, and he often surmised that there were some mysterious influences in operation which were in some way beneficial and which were favored by the association together of a comparatively large number of the insane. This, like most surmises, was very far from the actual fact.

To prevent the patient from injuring himself or others, to see that he have proper food, rest, sleep, exercise, occupation, and diversion, and do not fall into pernicious habits, is the main purpose at the asylum; it is not easier to do this with two or more patients than with one, it is only more economical; it could always be somewhat more effectively accomplished with one patient. There is no mystery about it whatever; natural aptitude and a thorough familiarity with the various phases of the disease are the essential elements of success in the treatment of insanity, if only the necessary funds are at hand.

Now, while it is always within the power of the very wealthy to equip a private establishment, with a resident medical attendant for the exclusive treatment of a single individual, and whether the case is curable or not such treatment may be made superior to any other, it often happens that cases are seen where, without any great expense the indications of treatment can be better carried out, say in a general hospital or a private family other than that of the patient, than in an asylum, and if it be a young person with an acute attack, a considerable ex-

pense ought to be incurred in order to provide, for a time at least, proper treatment outside of an asylum.

Asylums have grown to be so numerous and such a large number of young medical men are employed as assistants, that now there is coming to be quite a large sprinkling of practitioners outside of asylums who have a practical knowledge of insanity, men who know when brought in contact with a case how it ought to be treated, and whether, in view of all the circumstances, it is necessary to hurry the patient off to an asylum or not.

I shall not at this time attempt to describe the particular class of patients most suitable to non asylum or provisional treatment, nor the measures to be adopted to meet these indications, my purpose being to try to impress upon the mind of the practitioner the importance of carefully studying every case of insanity, satisfying himself as to the diagnosis and prognosis and then considering how the indications for treatment may be best met.

Such cases are often somewhat perplexing and troublesome, and I fear it has been too much the practice of late years, sanctioned by usage, not by science, to dismiss them hastily to an asylum, without due regard to facts or consequences.

34 Washington Street.

Progress of Medical Science.

The Effect upon the Nursling of the Mother's Diet.—The feeding of infants on artificial foods is a growing evil for which, although they inveigh against it, physicians are in a large degree responsible. Efforts are made to explain the evil away on such grounds as the desire of the mother to avoid the inconveniences of her natural duties, or of changed conditions of life causing inability to furnish food in sufficient quantity, if at all, or of deficient quality of the mother's milk, or other conditions, for all of which the mother is responsible. These conditions do exist in a greater or less degree, but aside from actual and acute disease, the maternal conditions may be tersely summed up in the statement that the mother is unwilling to make the sacrifices necessary if she performs her duty to her child. The responsibility of physicians lies in weakly conceding to the patient's desires, in place of strenuously insisting upon the mother's every effort to carry out the provisions of nature.

In these days of milk-foods, prepared foods, substitutes for mother's milk, etc., mothers do not understand that the nature which provides organs for bearing children, also provides organs for nursing children, and intends that these organs should be for use rather than ornament. She does not realize that the products of modern science at best are but poor substitutes for the products of nature. If the physician would insist upon the mother performing her natural functions despite her assertions that she "cannot nurse the child," "never could nurse her children," "didn't have milk enough," "nipples too small or too tender," or "milk left her in two or three months," etc.—if the physician should insist, and the mother persist, both would be surprised to find that long abused nature would still be willing to do her proper work. Patient endurance of discomfort, persistent effort, and proper food will eventually demonstrate the ability to nurse their infants, in nine out of every ten mothers who assert the necessity, in their individual cases, for "bringing up the baby on the bottle." And that, too, without scouring materia medica for imaginary galactagogues, and likewise to the very great benefit of both mother and infant.

During his six years' service at the Preston Retreat Dr. Joseph Price gave the medical profession, through that institution, some most valuable object lessons in obstetrical science. There was no secret in the methods used to make that institution the model maternity of the world, so far as professional results are concerned. His guiding principles were care, cleanness, and common sense. The strictest supervision of every detail, scrupulous practical cleanness and not so much of theoretical cleanliness, and simplicity in all matters, enabled him to complete his service with a mortality record never equalled in private or public maternity work. It was a law with him "to allow the mother to bear her own children," and it was equally the rule to require each mother to nurse her own infant during her stay in the institution. So very rare were exceptions to this rule necessary, that a nursing bottle could not be found in the entire institution. The patients in the Retreat were in no respect an exceptional class, save in the fact that so large a proportion of them were ill-nourished and impoverished in physical health when they entered the hospital—conditions which would entitle them to claim inability to nurse infants. Another fact of interest was noted, namely, that many mothers, who while in the house furnished abundant food-supply, and left the institution with thriving babies, would, after leaving, put the baby on the bottle as a matter of personal convenience, and in a surprising proportion of such cases would lose the babies within a few months.

The moral to be drawn is that almost every woman who can bear a child can nourish it. Attention to the body functions, generous supply of simple, nourishing food, and early and persistent efforts to establish and develop the mammary secretions were the only methods used to secure these results. In general practice the physician is too apt to give up the contest too early or to rely upon some form of stimulants to the glands, which eventually proves delusive if not injurious. It is a common practice to administer alcoholic beverages in the form either of ale, beer, or porter to nursing women for the purpose of increasing the milk supply. Beyond question these articles are capable of doing much injury to both mother and child, and their indiscriminate employment for such purposes should be interdicted.

Dr. J. W. Byers, in the *Annals of Gynecology and Pediatry*, has made some pertinent remarks on this subject. He says: "The truth is, in this practice of using alcoholic drinks the profession has followed the customs and whims of the laity, rather than the usual process of instructing and leading the latter. That there are conditions and circumstances in which the administration of malt liquors is of decided benefit to both mother and child, no one will undertake to gainsay. But that they are indicated in every instance of deficient lacteal secretion, or that the exigencies of the case ever render necessary their use to the extent as is commonly employed, none can maintain or justify. The promiscuous and general practice of using malt liquors by nursing women is irrational, does a vast amount of harm, and often causes disease in the suckling. We know that the mammary gland, for all practical purposes, may be considered as an organ possessing functions of a twofold or mixed character, namely, secretion and excretion. Under normal physiological conditions the first of these processes is in almost exclusive operation, though, as shown by experiences, the slightest alteration in the condition of the organism, whether of an emotional, medical, or dietetic character, may so change this secretion that it becomes to all purposes and effects an excretion, and an innocuous, healthy pabulum for the child is converted into a deleterious or poisonous substance. Experience is very general in showing that the milk fats and albumins in increased proportions have a decidedly injurious effect upon the digestion of the infant when taken into the stomach in excessive quantities. From a number of experiments conducted by Zaleski he found these substances in the milk in excessive proportions whenever the mother had partaken of alcohol. In each case where the mother was tested with malt liquors, the fat and albumin appeared and caused more or less disorder and distress of the digestive apparatus of the suckling. These deleterious influences, however, were not the worst. Analysis of the milk further revealed the fact that it

actually contained alcohol and the micro-organisms peculiar to malt liquors; that the liquor drank by the mother actually passed out *in toto* through the mammary gland and on into the child's stomach, and there produced all the phenomena incident to digestive disorders and febrile disturbances. These facts point to the belief and support the attitude, that the mammary gland under certain conditions exercises the function of an excretory organ, and that under some circumstances it becomes nothing more than a filter through which the food and drink taken by the mother passes directly into the stomach of the child. This being true, we are in a position to understand and appreciate the importance of the relation of the diet of the mother and the well being of the child. When we prescribe alcohol for the mother, we at the same time do so for the child. The diet of the mother is a stage in the milk-producing process, and the milk she produces, is, in every instance, the result, and only the result, of the food of which she partakes. If it be improper, unsuitable, or contaminated, the milk will express this in a proper ratio. In the case that beer or ale is administered it will find this outlet, and while it does not evidence deleterious influences to the extent of producing the worst results in the form of either colic, indigestion, or diarrhœa, in every instance its effects are present, and these are always among the possible results of its use. The effects of fat and albumin, when present in breast milk in excessive proportions, in producing evil effects on the child are too well recognized to dwell upon. That the more severe of stomach disorders—gastro-intestinal catarrh, enteritis, or even cholera infantum—are due to these substances, as a result of the abuse of malt liquors in the mother, is certain, though such is not generally admitted or recognized. Take care not to advise a woman whose milk supply is reasonably full to resort to beer or other liquors in order to increase it. Always impress upon them the increased risk to the child incurred by using them."—*The Medical and Surgical Reporter.*

modest spirit is hardly in keeping with the revolutionary nature of his doctrine. He admits that the modern physiologist, with microscope in one hand and his last mounted slide in the other, is undeniably sceptic about all matters incapable of material demonstration, and sometimes overlooks the fact that much, if not all, progress is but the pursuit of theory.

We cannot follow the author too closely in his chase of theory, though the mental exercise is doubtless bracing and exhilarating enough. Dr. Cullen is lucid in style and simple in diction. There is no mistake about his views. For example:

Concerning the ovule, he personally inclines to the belief that, "apart from the theory of continuity provided by the latent germ idea, which, up to a certain point, seems

Dermographismus.—Dr. Ehrmann describes a peculiar condition of the skin occurring under various circumstances, and depending for its appearance upon mechanical irritation. He distinguishes three degrees of this condition: In the first there appears one after another contraction of the cutaneous muscular tissue, with anæmia of the parts affected, then hyperæmia, and finally transudation; in the second the muscular contraction is very slight, the anæmia is not so marked, and there is hyperæmia of the superficial layers of the skin only; and in the third there is only transitory reddening of the skin. But the more common form of case is that in which, on the portion of skin affected, small raised patches of œdema appear around the roots of the hair, so that on stroking the skin with some blunt body, or even by the pressure of the clothes, or a button, etc., only an isolated group of white papules appear, which cause an irritation of the skin and consequently soon lose their characteristic appearance, owing to being scratched by the patient. In such cases cutaneous pruritus is diagnosed a "pruritus nervosus." In some cases recorded the appearance closely resembles that of lichen ruber planus. Ehrmann draws a distinct difference between dermographismus and urticaria. The latter is caused by the action of some toxic substance, this being derived from some affection of the skin or of the digestive organs, or some pathological products are formed (auto-intoxication); but he admits that in some cases of urticaria, in which the nervous system is affected, that disease and dermographismus may exist together. This condition has been observed after mental excitement, such as fright, or in cases of neurasthenia and hysteria. He considers the influence of the nervous system as sufficient to produce dermographismus, and that the presence of a toxic substance is not necessary. Examination of the urine demonstrated the presence of indican in only one out of fourteen cases.—*Allgemeine Wiener Medicinische Zeitung.*

Epidemic Skin Disease.—At a recent meeting of the Dermatological Society of Great Britain, Dr. Savill showed eleven cases of dermatitis which had attacked nearly five hundred children in a day school where the average daily attendance was about one thousand. (*The Lancet.*) It was thought by their teachers to be ringworm of the face, and they were taken to a neighboring hospital for such, but it was shown not to be ringworm because the scalp had not been attacked by the disease in any case, and no characteristic spores or mycelium could be found after careful search. Moreover, the disease resembled a dry eczema occurring in patches, not healing in the centre as ringworm does, nor had they the raised border. They were chiefly on the face, though some of the children had patches on the arms and legs. In the discussion which followed, Dr. Stephen Mackenzie regarded the condition as a common and comparatively trivial affection; but Dr. Savill pointed out, in reply, that the cases of these children very closely resembled the youngest of the cases with the epidemic skin disease described in 1891. Many of the cases of this disease he had subsequently seen (such as those at the Bethnal Green Workhouse in 1893) had been very much milder than the 1891 cases; and it would be a matter for subsequent inquiry and research whether the cases of these school children belonged to the same category or not. At any rate, there seemed evidence to show that the disease, whatever it might be, was a contagious one, spreading as it had done so extensively in this school among children who, when not at school, must live under such varying conditions of environment that it would be hard to find a local cause in operation common to them all.

Treatment of Appendicitis.—Dr. Swain holds that, since about ninety per cent. of cases of appendicitis recover spontaneously, early operative interference in nearly every form of appendicitis is not justifiable. (*Therapeutic Gazette.*) Cases of simple and plastic appendicitis are to be treated by rest in bed, moderate amount of liquid diet, purgatives, rectal injection if necessary, local application of leeches or fomentations, and hypodermics of morphine for the relief of pain. As soon as pus is present operation is indicated. This may be performed during the first week, but is more commonly required during the second. When in doubt as to the presence of pus, there is usually no great harm in delaying operation. If, however, the symptoms are steadily growing worse and the pulse becoming rapid, operation is indicated. Section, then, is called for in suppurative cases, in cases where there is good ground for suspecting deep suppuration, and also in the relapsing and rapidly perforating cases. The best incision is the oblique one, placed at right angles to an imaginary line drawn from the right superior iliac spine to the umbilicus. This should be from two to four inches long, and should be placed about two or three inches internal to the iliac spine. In suppurative cases the incision should be placed over the seat of suppuration, since thus there is less risk of opening the peritoneal cavity. The appendix should be removed in suppurative cases only, when this operation is readily effected without opening the general cavity.

The risk of fecal fistula is lessened by suturing the muscular and mucous walls of the stump of the appendix, and then invaginating this into the cæcum and stitching the peritoneum over it.

Safranin Reaction in Sputum.—A simple test as an aid to diagnosis is suggested by Zenoni. (*The Lancet.*) It depends upon the fact that mucin is colored yellow by safranin, while albumin is stained red. In the sputum of bronchitis mucin predominates, while in that of pneumonia there is a much larger proportion of albumin. Zenoni, therefore, prepares a cover-glass specimen of the sputum by spreading the latter out in a thin layer on the former, places it at once in absolute alcohol, and leaves it for a quarter of an hour; by the end of that time the film becomes coagulated and fixed to the glass. The preparation is then stained in a half saturated aqueous solution of safranin. When the cover-glass is removed it is partially dried and then placed on a white ground and examined. If it is stained a yellow color mucus predominated in the sputum, and the case may be assumed to be one of bronchitis only, while if a red color appears albumin was the chief constituent, and pneumonia was probably the condition present. This test, if proved to be trustworthy, would be a considerable aid to diagnosis in those cases in which the physical signs of pneumonia are doubtful. Especially would it be of value in the case of children if a sample of sputum could be obtained, as can usually be done with a little trouble. But further trial will be required before it can be generally accepted.

The Surgical Treatment of Perforation from Gastric Ulcer.—Few cases offer more temptation to the adventurous surgeon, and in few, unfortunately, have his endeavors been rewarded with less success than those of rupture of a gastric ulcer into the peritoneal cavity. The affair seems, on the face of it, so absolutely simple; the patient may be in perfect health, with the exception of this little perforation and the resulting extravasation of the contents of the stomach into the peritoneum, and, moreover, in the majority of cases in which the rupture has been sudden and the symptoms typical, the perforation has been in accessible regions—on the anterior wall of the stomach—and yet, so far, few attempts to sew up the opening seem to have been attended with success. Great interest, therefore, attached to the case reported by Mr. Morse, of Norwich, England, in which a young woman having symptoms of gastric ulcer was suddenly seized with symptoms of perforation, and was treated by him successfully by means of celiotomy and suture of stomach. Abdominal section was performed within five hours of the accident; the contents of the stomach were found in the peritoneal cavity; the viscus was withdrawn and a perforation found; the stomach was thoroughly washed out and the wound united. No food was given by the mouth for sixty hours, and in three weeks the patient was well. The points of importance conducing to the success of this case would seem to be, 1, early operation, before irrevocable septic mischief has arisen through absorption from the peritoneal surface; 2, washing out the stomach as a preliminary to introducing the sutures; this was managed by introducing a large cannula through the perforation, and alternately filling this viscus with water and emptying it until the fluid came away clear; 3 drawing the stomach out through the wound, so as to perform the washing and suturing with facility; and 4, most important of all, the very great care taken to thoroughly wash out the peritoneum. The manœuvre adopted by Mr. Morse, with this object, will probably be useful for other purposes also. Instead of merely passing a tube to the various regions of the abdomen, leaving the return water to wash out the fragments, two large tubes were passed side by side to every part of the cavity, and the flushing was continued at each spot until the return fluid was clear; by this arrangement the extravasated stomach contents were washed out through the tube, instead of drifting in the stream from one part of the abdomen to another. It is to be hoped that other surgeons will be able to obtain like success in the treatment of this otherwise very fatal accident. On a very different footing stands the proposal to treat perforation of the bowel in enteric fever, as was shown by the discussion at the Medical Society of London on March 9th. The patient is already seriously ill, and, although the accident, of course, happens suddenly, the signs of its occurrence are often by no means typical. The stupor of the patient leads to the symptoms being more or less masked, the moment of onset may not be discoverable, the pain may not be severe, and the patient may only seem to pass from a bad into a worse condition. Moreover, the ulcers are generally multiple and the intestine rotten, so that the stitches may have to be inserted in unhealthy tissues, possibly even in the bases of other ulcers! A certain number of such cases also recover under medical treatment. The operation, then, would seem a much less hopeful one than that for perforation of gastric ulcer.—*Medical News.*

Extramedian Incision in Laparotomy.—Dr. Flatau has, since 1890, abandoned the practice of cutting in the median line in ovariotomy and other abdominal operations performed on women. Out of thirty-three cases where the incision was made outside the middle line, not one has been complicated by hernia of the cicatrix. He cuts one centimetre, or two-fifths of an inch, to the left of the linea alba, laying bare the rectus, the fibres of which are easily parted (*The British Medical Journal*). In only three or four of the cases did he divide an artery that required ligature; pressure forceps were always sufficient to stop hemorrhage from veins. After a little gentle pressure on the muscle all oozing ceased, and the wound was quite dry by the time the peritoneum was divided. Flatau objects to washing the edges of the wound with carbolic lotion, as the irritation thus set up may interfere with immediate union. He has never met with any difficulty in manipulating on the right side of the abdominal cavity, the incision being [illegible]

Dr. J. W. Byers, in the *Annals of Gynecology and Pediatry*, has made some pertinent remarks on this subject. He says: "The truth is, in this practice of using alcoholic drinks the profession has followed the customs and whims of the laity, rather than the usual process of instructing and leading the latter. That there are conditions and circumstances in which the administration of malt liquors is of decided benefit to both mother and child, no one will undertake to gainsay. But that they are indicated in every instance of deficient lacteal secretion, or that the exigencies of the case ever render necessary their use to the extent as is commonly employed, none can maintain or justify. The promiscuous and general practice of using malt liquors by nursing women is irrational, does a vast amount of harm, and often causes disease in the suckling. We know that the mammary gland, for all practical purposes, may be concase, where the first one half-grain dose produced sickness and vomiting; but even here subsequent doses produced no bad effects. On two occasions the pulse was felt to be somewhat irregular while the drug was being administered. The drug lowered the temperature, and the subsequent reactionary rise of temperature was unaccompanied by shivering except in one case out of about three hundred and sixty miscellaneous cases in which the drug was given. The great advantage claimed for lactophenin in typhoid fever, however, is its sedative action; delirium vanishes, the mind becomes clear, and the patients all experience a pleasant subjective feeling, such as is given by no previous method of treatment; appetite quickly appeared in all cases. To what extent chance played a part in the happy results obtained, and whether the drug really cuts short the course of the disease must be left as questions to be decided by further observations. No protection against hemorrhage or relapses can be expected from this drug any more than from other methods of treatment.—*Centralblatt fuer innere Medicin.*

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PATERNAL IMPRESSIONS.

A SEX war is threatened. While the retention of the time-honored "male" in the Constitution is trembling in the balance, a British innovator is making a stealthy claim for the recognition of "paternal" impressions over the well-known maternal variety of prenatal influence. Dr. Cullen is the "surgeon-accoucheur," as he styles himself, who unblushingly publishes in the *Provincial Medical Journal* his vindication of fatherhood in so serious a matter as the transmission of impressions to the unborn.

It is quite safe to assume that an outraged motherhood will not calmly submit to this unheard of masculine encroachment on a prerogative founded in nature and sanctioned by medical tradition.

At the outset of his learned discourse the "chirurgien-accoucheur" is inclined to be a trifle apologetic, which modest spirit is hardly in keeping with the revolutionary nature of his doctrine. He admits that the modern physiologist, with microscope in one hand and his last mounted slide in the other, is undeniably sceptic about all matters incapable of material demonstration, and sometimes overlooks the fact that much, if not all, progress is but the pursuit of theory.

We cannot follow the author too closely in his chase of theory, though the mental exercise is doubtless bracing and exhilarating enough. Dr. Cullen is lucid in style and simple in diction. There is no mistake about his views. For example:

Concerning the ovule, he personally inclines to the belief that, "apart from the theory of continuity provided by the latent germ idea, which, up to a certain point, seems incontrovertible, the latent germ contains very little of the individuation of the parent organism prior to the beginning of maturition in the Graafian follicle, and that the inheritance of the maternal characteristics continues from that point to impregnation and onward to the expulsion of the embryo from the uterus. The element of chance, which forms a law in the pollination of plants, has no analogy here, since the conditions are not similar, for we presume that ovules and spermatozoa are equal one to the other, and capable of similar results under similar and suitable circumstances."

It is certainly comforting to be assured that the human father does not procreate in the haphazard fashion of plants. This brings us to the author's chief contention, namely, that the male element has influences upon the female beyond that of mere fertilization, and that these influences should be termed paternal impressions.

The following narrative ought to be conclusive to all except frivolous sceptics: "A friend, resident in Springbarn, possessed a fine female dog of pure Dalmatian breed. Accidentally she mated with another who was no choice of her master, and, to the latter's supreme disgust, presented him with a generation of collie mongrels. This was bad, but when informed that his Dalmatian was now ruined for breeding purposes, he declined to credit the statement and resolved to test it for himself. In process of time he had her warded by a pure, male dog of her own breed, belonging to a gentleman in Kilsyth, and on this occasion she dropped six puppies—three of them, however, being perfect collies to such details even as the claws. Here, it is evident that the mother not only impresses the conception, but the conception retaliates with the paternal impress. The same law holds good with swine, cattle, horses, and other animals. Nisbet, in 'Heredity and Marriage,' refers to it as occurring among widows who have married again and borne children resembling those by their first husbands. Sir J. Y. Simpson related to Dr. Harvey a similar fact. Poultry may bear a sequence of fecundable eggs from one impregnation. This is an allied paternal impression."

The eminent "chirurgo-obstetrician" is at all events impartially complimentary. After having told us that husbands are more circumspect than plants, he makes "honors easy" by informing the reader that "widows who have married again" may be classed with certain mammals and selected poultry.

What have the ardent woman suffragists to say about the next quotation?

"In attempting to explain paternal impressions it is necessary to prove paternal superiority. That woman is not the aggressive equal of man is a fact and not a fault. Menstrual, maternal, mammary, and emotional features in her nature prevent her equality, and where a striking individual exception has occurred it has been at the expense of what we define as feminine characteristics. The intellectual female becomes masculine from the very characteristics which mark her distinction. Her physical nature with remarkable frequency possesses the same distinction, and is barren in a reproductive sense. The same law applies no doubt to men of genius also, and is explicable in the sense that you cannot both have your cake and eat it. External mental expenditure, if it may be so termed, when intense and complete, leaves nothing for internal transmission, and Galton's industrious work on 'Hereditary Genius' notwithstanding, genius is not hereditary. The exceptional female whose talents have given her a masculine equality, has only really unsexed herself, which is an instinctive acknowledgment that prepotency rests with the male. The ancient Greeks who through Plato and Aristotle gave us systems of logic and philosophy which denote the highest powers of reasoning, never doubted this ascendancy. "στῦλος ὄικου παιδές εἰσιν αρσενες" (Male children are the pillars of a house) was a dictum among them. So believed the Latin races, and so others. Pedigree everywhere is reckoned through the male, and this is no arbitrary proceeding but the instinct of circumstances, and the outcome of accumulated experience."

We are also reminded that "the testicle is a most delicately sensitive structure. A squeeze will illustrate this. That its sensitiveness is not purely local, but has a consti-

tutional effect, may be proven by the same means. Of its nerve-supply and the ganglionic nature of it, there can therefore be no doubt, and that it has a function beyond a merely local secretion of the male element there can be as little doubt, for it is evidenced by the mental change produced by castration. Similarly, the dementia noted to follow the loss of the ovaries in the female proves not only the loss of the tissue itself, but the loss of a contingent portion of the perfect organism, and one primarily and absolutely in touch with the sensorial functions."

In his final summing up the author tells us that, the immature ova and sperm-cells are simply latent germs minus those vital and dynamic conditions which mature them and constitute their activity after their conjunction, but which in the case of the male element have been fully impressed upon it prior to this union. With the beginning of maturity in the Graafian follicle begins the impress of the maternal characteristics upon the ovule, which continue until full maturity of the conception in the uterus—the conception and maternal organism being marked by a mutual and striking affinity. This is also evidenced even in nursing, as it is well known that excitement of the mother affects the nursling through the milk.

The spermatozoon, unlike the ovule, must be, and is, fully equipped at the moment of impregnation with all the characteristics of the male organism. The necessity of this special equipment is arranged for by a much more complex and detailed organ of reproduction in the male. While the female characteristics are conveyed to the ovule by the sympathetic system, they are continued to the ovum by the nutrition. In the male the paternal characteristics are conducted through a special ganglionic centre, and are impressed upon the spermatozoon during an elaborate and tedious transit through specially arranged tubing.

This ganglionic or reproductive nerve-centre in the male becomes active near the completion of growth, and its development is accompanied by those symptoms which mark the arrival at adolescence. At this period all roads lead to Rome, all thoughts lead to reproduction—until the function is established.

That the function is dependent upon an active and complete connection with an intelligent sensorium, is proved by the fact that male imbeciles are impotent, and also, I think, by the fact that imaginative and emotional races are the most prolific. Were the reproduction powers contained in the latent germ they would be independent of subsequent mental development. The fact also that diseases such as syphilis, contracted in adult life, affect the product of conception, and through it the mother, proves that the spermatozoon is very literally an up-to-date creation, and that it very fully represents a concentrated extract of the mature paternal organism. That the male element has an influence on the female organism over and above that of fertilization, is incontrovertible; her first impregnation has literally a double result; with the conjunction of the respective elements there develops a mutual product whose resemblance to the male organism would be infinitesimal, were its initial activities not potent enough to affect, and afterward modify, those of the mother.

Consequently the reproductive elements are latent germs in the first instance, which attain maturity by being charged with organic impressions from the parent, much after the manner of charging a phonograph with messages; which messages are liberated in the female system after meeting the suitable medium of the similarly, though not equally, charged ovule; or, to use another metaphor, if we consider the individual as a book, each spermatozoon is an index of the contents, but how printed, is a conundrum precisely on a level with how facts or ideas are recorded in memory, and we can conceive no material method for the performance of that function.

To append any further comments to this brilliant *résumé* would be to invite possible misconceptions, which must not be thought of in connection with paternal impressions.

PAIN, PLEASURE, AND ÆSTHETICS.

The physician is more apt to think of pain in connection with its avoidance by anæsthetics, than he is to associate it in any way with pleasure and æsthetics. It is with the psychology of pain that the author of a book fresh from the press of Macmillan & Co. has to do, and he treats of it together with its correlate pleasure, laying stress upon their special reference to æsthetics. In the first chapters the place which pleasure and pain should occupy in psychological classification is sought to be determined, as well as the relationship between them. The conclusion is reached that they must be looked upon as general qualities, one of which must, and either of which may, belong to any fixed element of consciousness. In the course of his examination the author further concludes that, we must assume the existence of an impulse within ourselves which leads us to produce results which have the power to attract others to us. This impulse might be identified with the art impulse. The reader will understand the trend of these preliminaries when, further along, the attempt is made to prove that all efforts to discover special qualities in beautiful objects which determine their beauty have invariably failed. The mental state of the observer of the beautiful in art and nature must be studied, and principles of unity sought on which to base the philosophic treatment of the subject. Æsthetics are considered as a branch of the science of pleasure and pain, but the author believes only those pleasures to be æsthetic which are permanently pleasurable in the memory. The æsthetic field is thought, therefore, to vary with different races and different individuals, and in the same individual at different times; changing with his change of conception as to what is worthy in the world surrounding him. To correct the individual taste it is necessary to recognize the standard of others, and to compare it with the taste of the educated and refined. It is futile to try to force our standard upon others.

Upon page 215 the author gives the basis for pleasure-pain phenomena. "Pleasure," he says, "implies use of surplus stored energy, while pain implies a subnormal reaction to a given stimulus." Pain, in other words, is determined by the reception of a stimulus to which the organ is incapable of reacting.

The author, Henry Rutgers Marshall, shows himself to be quite at home with this very intricate problem, and one's confidence is secured from the start by the thorough acquaintance displayed with the views of other writers. Even if one cannot accept all the theories, it will repay the reader for the difficulties in gaining acquaintance with the author's terminology, and some new ideas will be found advanced.

not recover, he will break down entirely. Dr. Schweninger has been called to Varzin to be present in case the condition of his illustrious patient should grow worse. Mr. Gladstone was recently operated upon for cataract. The young King of Spain is very delicate, though no definite disease has as yet declared itself. President Cleveland is reported to be suffering from malaria and the effects of overwork.

A Hospital for Consumptives is to be erected in Toronto, Canada, Mr. W. J. Gage, of that city, having made a contribution of $25,000 toward that purpose.

The Tri-State Medical Society, embracing in its membership the three States of Georgia, Alabama, and Tennessee, will hold its next annual meeting at the Kimball House, Atlanta, on October 9th, 10th, and 11th.

A Prize Essay on Tuberculosis.—The Colorado State Medical Society offers a prize of $100 for the best essay upon "The Diagnosis of Tuberculosis by Microscopic Examination of the Blood." The paper is to be of such a length that not more than thirty minutes would be consumed in its delivery. The name of the author must be kept secret. Essays in competition for the prize should be sent to Dr. Charles Denison, Denver, not later than April 1, 1895.

Miss Florence Nightingale is an honorary president of the Tropical Section of the International Congress of Hygiene and Demography, in session this week in Buda-Pesth.

Sunstroke.—Surgeon-major Martin recognizes three forms of sunstroke, viz.: The congestive or cerebro-spinal, the syncopal, and the pulmonary. In all these cases he says death appears to be due to the absorption and non-elimination of the toxines or leucomaines produced in excess by great muscular fatigue, and which rapidly poison the system. This toxic saturation of the body is facilitated by damp heat and stormy weather as much as by insolation properly so called. When, in spite of precaution, a soldier is attacked, he must be at once taken to a shady or cool place, his clothes loosened so as to facilitate breathing, artificial respiration should be practised, while an assistant at the same time produces corresponding compression over the body. While artificial respiration is being performed the head of the sufferer is covered with a cooling bandage, sinapisms are applied to the lower limbs, and a subcutaneous injection is given every hour of one Pravaz syringeful of ether. In the syncopal or pulmonary form, in which the nervous system is prostrated, it is better to give injections of caffeine, as much as a gram in the twenty-four hours, and in the congestive form, while cold affusions are applied to the head and sinapisms to the extremities, to give subcutaneous injections of pilocarpine to produce profuse perspiration; and then to aid in the elimination of the toxines purgative enemata must also be given.—London Correspondence of the *American Practitioner and News.*

Quack Nurses.—Quackery is contagious and widespread. There are quacks not only in medicine, but the infection seems also to have invaded the profession of nursing. From Detroit comes the announcement of the organization of a "Correspondence School of Health and Hygiene," which proposes to give "instruction by the correspondence method in the care of the sick." The course of instruction, it is believed, "if thoroughly studied by a reasonably intelligent person, will render the pupil as truly a trained nurse as the great majority of those who come from the training schools. . . . No previous training or study is required other than the ability to read and comprehend." As to age, sixteen is not considered too young nor fifty too old. It needs scarcely be said that the art of nursing is not to be acquired by correspondence, from reading, or even from didactic lectures; these measures may aid in the comprehension of the principles upon which intelligent and rational nursing is based, but actual experience by the bedside, in the hospital-ward, and in the sick-room, is absolutely essential.—*Medical News.*

Large Families do not seem to be so very rare even in these latter days. We recently referred to the fecundity of Canadian women, and now England comes to the front with large families. A London family paper not long since offered a prize of one guinea to the woman subscriber who could prove that she had the greatest number of children. The prize was divided between two women, each of whom had twenty-five children. The first sixteen women entered on the list of competitors had a total number between them of two hundred and eighty-eight living children.

Diphtheria Antitoxin.—At a late meeting of the Berlin Medical Society Dr. Baginsky criticised rather unfavorably the report of the antitoxin treatment of diphtheria made at a previous meeting by Katz, to which we referred in a recent issue. He said that the credit of the discovery was due to Bogola, of Sienna, who first made in-

oculations of a diphtheritic material in 1868. Analyzing Katz's report, he said that of 128 cases only 14 died, and from these deaths those attributed to scarlatina, septic poisoning, etc., were eliminated, leaving a mortality from the disease or the drug of only about thirteen per cent. But, if the same process of elimination was carried out in cases treated by the ordinary methods, he believed that the difference in favor of the new mode would be found to be very slight, if indeed there was any.

The Mortality of European Cities.—The annual death-rate per 1,000 of the following cities, as computed for the returns for the first week in August, is: Paris, 19; Brussels, 19; Amsterdam, 12; Rotterdam, 17; The Hague, 15; Copenhagen, 15; Stockholm, 15; Christiania, 16; St. Petersburg, 62; Moscow, 43; Berlin, 19; Hamburg, 19; Dresden, 19; Breslau, 33; Munich, 26; Vienna, 23; Prague, 24; Buda-Pesth, 25; Trieste, 30; Rome, 16; London, 17; Liverpool, 27; Birmingham, 14; Manchester, 21; Dublin, 20; Edinburgh, 14; Sheffield, 18, and Swansea, 10. The excessive rate for the Russian cities is due largely to the epidemic of cholera.

Boracic Acid.—The greater part of the crude boracic acid imported into England comes from Tuscany, in the immediate neighborhood of Castelnuovo. It is originally dissolved in the waters of an underground hot lake, which sends off steam charged with about three per cent. of boracic acid through many openings, called "fumerolles," on the surface. The steam is condensed, and the acid dissolved in fresh water, from which it is crystallized in tubs. The acid is then packed in casks and shipped from Leghorn to England, where it is refined into the pure pulverized boracic acid familiar to our readers.—*Medical Press.*

A Medical School for Women is about to be established in St. Petersburg under Government auspices. A similar institution was organized through private initiative a number of years ago, but was soon closed by the authorities, and since that time the Government has always frowned upon the higher education of women.

Professor Josiah Parsons Cooke, Professor of Chemistry at Harvard, died at his summer residence at Newport, on September 3d. He was sixty-seven years of age. He was graduated from Harvard in 1848, and had been connected with the University in a teaching capacity since 1850.

The Eighth International Ophthalmological Congress was held in Edinburgh during the first week in August, under the presidency of Dr. Argyll Robertson. Drs. Henry Power and Swanzy were elected vice-presidents, Dr. Berry, general secretary, and Drs Parent, Hess, and Fergus assistant [illegible]. The honorary presidents

the seventh Congress was held in Heidelberg in 1888. In Donders he said had been lost one of the greatest ornaments of the world of science, and in Becker the ophthalmological world had lost an able surgeon whose discoveries in the anatomy and pathology of the lens were classical. He referred also to the absence of Helmholtz,

A Cattle Quarantine Station.—All horned cattle, sheep, and swine imported into this country must be kept in quarantine for a period until all danger of the development of tuberculosis, pleuro-pneumonia, foot-and-mouth disease, anthrax, or hog cholera has passed. The period of quarantine for cattle is ninety days, that for sheep and swine fifteen days. The Government provides the quarters for the animals free of expense to the owners, but the latter must pay for the transportation of the animals to and from the station, and for their keep when there. There are stations of this kind at several places along the coast, but the most important one is at the Garfield Farm, near Passaic, N. J.

The Dangers of Thyroid Extract.—Dr. W. D. James reports in the June number of the *British Journal of Dermatology* a case of glycosuria caused by thyroid extract given for the relief of psoriasis. The patient was a medical man, had taken the extract in small doses for some time without effect upon the disease, and then increased the dose quite suddenly. At the end of a week he began to suffer severely from depression, with frequent flushings and palpitations. The nervous symptoms increased, and the patient felt and looked a very old man. Before another week elapsed his thirst became unquenchable; the quantity of urine greatly increased, the breathing became embarrassed, the pulse rose to 132 per minute, and the smell of acetone was detected in the breath. The urine had a specific gravity of 1.032, and sugar was freely found by all tests. The thyroid treatment was at once stopped, and antidiabetic diet adopted, with the result that the quantity of sugar decreased daily, and disappeared entirely in a few days. No improvement was noted in the psoriasis.

A Definition.—A London daily paper explains to its readers the term "exploratory incision," which, it says, "means quarrying into a patient on the chance of discovering some disease in an internal organ which is curable by its removal."

Reviews and Notices of Books.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Vol. XV. Washington, Quarto, pp. 842. Government Printing Office. 1894.

VOL. XV. of this well-known series is somewhat smaller in bulk than its predecessors. Its contents are from Universidad—Vzoroff, and covers 6,152 author titles, representing 3,312 volumes, and 4,235 pamphlets. It also includes 8,596 subject titles of separate books and pamphlets, and 35,667 titles of articles in periodicals. Its editor and compiler, DR. JOHN S. BILLINGS, still has charge of the work, and is to be congratulated on its approaching completion.

WEEKLY ABSTRACTS OF SANITARY REPORTS (1–52), vol. viii.

THE volume contains the voluminous weekly reports of the Supervising Surgeon General of the Marine Hospital Service for the first half of the year 1893, has 1,300 pages of contents, and is of value chiefly to the sanitarian and statistician in need of official data.

BURDETT'S HOSPITAL AND CHARITIES ANNUAL, 1894, being the Year Book of Philanthropy. Fifth year. By HENRY C. BURDETT. London: The Scientific Press, Limited. New York: C. Scribner's Sons.

THIS useful volume is replete with information regarding the charities of the English speaking world, and notwithstanding its nearly six hundred pages is a marvel of condensation. It touches upon almost every subject in which philanthropy is concerned; it discusses philosophical problems, character and cost of work done, sources of revenue, as well as directs into proper channels the contributions of that very large class who disburse in a perfunctory way a moiety of their income, without the least care for its destination. A paragraph upon the professional philanthropists, who live on their share of the subscriptions, well portrays an aberrant species not unknown even in our millennial hemisphere. The groupings of hospitals, asylums, homes, and orphanages are admirable, and constitute a *coup d'œil* as searching as comprehensive. In fact, in this annual, besides the enormous labor bestowed upon its compilation, about which the general reader takes but little thought, there is a wealth of texts capable of being amplified into many sermons. To say the least, the author has made an encyclopædic addition to a much needed literature for the physician who looks beyond the mere emoluments of his profession.

THE TRUTH ABOUT HOMŒOPATHY. By DR. W. H. HOLCOMBE. Philadelphia: Boericke & Tafel. 1894.

THIS is a posthumous manuscript which is a defence of homœopathy. Although it contains no new argument, it is well written, and as such may be considered a desirable addition to the class of literature to which it belongs.

ANNALES DE L'INSTITUT DE PATHOLOGIE ET DE BACTÉRIOLOGIE DE BUCHAREST, publiées par VICTOR BABES, Professeur à la Faculté de Médecine et Directeur de l'Institut. Deuxième Année, 1890. 4to, pp. 506. Bucharest, 1893.

THIS handsome volume is the third part of the "Annals of the Institute of Pathology and Bacteriology of Bucharest," and contains the papers published from that laboratory during the year 1890. Thirteen papers in all are included, the majority of which are here given in both the French and Roumanian languages. All have appeared before in different medical periodicals; they are here collected for convenience of reference. Among them are three papers on glanders and its bacillus, one on scarlatinal nephritis, two on the association of bacteria in the production of disease in general, and of the lesions of tuberculosis; three on different phases of tuberculosis, including the results of treatment of lupus by tuberculin, and an exhaustive paper on the different forms of the plasmodium malariæ. Many of the papers are handsomely illustrated by colored plates.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION, for 1893, vol. x. Edited by E. D. FERGUSON, M.D, New York. 8vo, pp. 585.

THIS volume contains the usual variety and number of valuable communications from its talented contributors, and is in every way the equal to any of the former editions, which is saying all we can in its praise. The frontispiece is an excellent portrait of the late Dr. A. L. Carroll, one of the founders of the Association, whose obituary by Dr. Gouley is a model of its kind and well befitting the subject. A very comprehensive decennial index also adds to the value of the volume.

THE PRACTICE OF MEDICINE. By EDWIN M. HALE, M.D., author of "New Remedies," "Diseases of the Heart." Emeritus Professor of Theory and Practice, Chicago Homœopathic Medical College, etc. 8vo, pp. 1018. Chicago: Gross & Delbridge. 1894.

THIS work, which is very complete in its way, is intended more especially for practitioners of homœopathy, although it has a strong liberal tendency toward what the author styles the old school of practice. The author is certainly very liberal in his views, refreshingly dogmatic in his condemnations, and emphatically positive in drawing the line between what is and is not tenable in the present accepted doctrines of disease. There is no mistaking what he means when he gives the results of his personal experience in "proving" and in the ultimate results of treatment. The reader everywhere in the text finds the different drugs, of large and small degree, in strange relations with each other, that are hardly explainable on the score of a compromising liberalism as to their respective actions. With a laudable effort to reconcile treatment to the latest discoveries in bacteriology, he is hardly consistent in his attempt to explain the action of germicides with the doctrine of similia similibus curantur. The task is professedly a difficult one, and he makes as good a showing as is possible under the circumstances. His descriptions of the clinical phenomena of disease are terse and to the point, and are made especially interesting by numerous historical references not usually found in similar works. The chapters are short, the subjects numerous, and their discussion interesting and suggestive. The frontispiece, which is the only illustration in the work, gives an excellent likeness of the author with his autograph.

Medical Journals not Appreciated.—The following reply was returned to a circular letter soliciting subscriptions to a certain medical journal:

FARIBAULT, MINN.

Your Copy of the ——— Jurnal come, and the letter to—askin me to send fifty cens and git it fur a yeer. I don't nead no jurnals. When I git a tuff case I go off inter sum secrit plase and tell the lord all about it and wate for him to put inter my minde what ter do. That's bettern jurnals and syklopedes and such. If we hed more lord trustin docters and less colleges weed fare better. The lord noes morn all the doctors and if we go to him fur noledge it ill be bettern jurnals.

Fraternally in the lord,
A CHRISTUN DOCTER.

P. S.—I've practist medisen morn fifty yeers. Yore ken publish this letter if you want ter.—*Northwestern Lancet.*

Royal Ladies who Smoke.—A census has been taken of the cigarette-smokers among the ladies of the courts of Europe, and it has been found that the majority of them indulge more or less openly. Among them are the Queens of Italy, Spain, and Portugal, the Czarina, and the Empress of Austria.

Society Reports.

CANADIAN MEDICAL ASSOCIATION.

Twenty seventh Annual Meeting, held in St. John, N. B., August 22 and 23, 1894.

(Special Report for the MEDICAL RECORD.)

DR. T. T. S. HARRISON, of Selkirk, Ontario, the President of the Association, called the meeting to order, and introduced several delegates from foreign medical societies. Among these were Dr. L. Duncan Bulkley, of New York, delegate from the American Medical Association, and Dr. Jonah, of Eastport, from the Maine Medical Society. Drs. Charles O'Reilly, I. H. Cameron, and J. E. Graham, delegates of the Ontario Medical Association, were also present. A large number of new members, chiefly from the Maritime Provinces, were admitted. Letters of regret were read from Sir Charles Tupper, Drs. Osler, Marcy, Bray, Mullin, and McLean.

Epilepsy.—DR. HATTIE, of Halifax, read a paper with this title, dealing chiefly with theories concerning the etiology of the affection. He gave an extended report of certain experiments and of the post-mortem changes that he had observed. These changes, however, he thought might be rather the result of the nerve storm than the cause of it. The most probable cause lay in the action of some toxic irritant, itself the product of some systemic disease. Anæmia is present in most cases of epilepsy, and the speaker thought that this might possibly be the condition upon which the disturbance depended. On the supposition that the poison might be absorbed from the intestinal tract, he had administered intestinal antiseptics in conjunction with the bromides, and, comparing the number of paroxysms occurring under this method of treatment with the number observed when the bromides alone were administered, he was led to the conclusion that there was at least a modicum of truth in his assumption. Under the new method there was a very marked diminution in the number and frequency of the attacks.

The paper was discussed by Drs. Cameron, of Toronto, and Wright, of Ottawa.

Antagonism of Erysipelas and Tuberculosis.—DR. MUIR, of Truro, reported a case of tuberculous disease of the arm which had been cured by accidental infection with erysipelas. The patient was a woman, thirty-nine years of age, who had suffered from well-marked and typical tubercular ostitis of the arm for fourteen years. Examination of the discharge from the sinuses showed the presence of the tubercle bacillus. The sinuses were opened and scraped and an iodoform dressing was applied, but little or no improvement followed the operation. Five weeks later the wound became accidentally infected with erysipelas. The patient was very seriously ill for some time, but finally made a good recovery from the erysipelas, soon thereafter it was observed that the original trouble was improving, and in a comparatively short time the tuberculous disease was entirely healed. The speaker exhibited some photographs showing the condition after the attack of erysipelas.

Presidential Address.—The subject of the President's address was, "My Experience and Observation in the Practice of Medicine Extending over Half a Century." The address dealt chiefly with the clinical signs and treatment of the various diseases commonly met with among the early settlers in the woods, of the more usual domestic remedies employed by these pioneers, and of the difficulties and hardships of the medical practitioner in those days. He referred also to the fact of the disappearance of miasmatic diseases and murrain since the country had been extensively cleared up and drained, and dwelt upon the problem as to how and by what means the specific germ-diseases were introduced into a new country. He did not believe that the specific causes could originate *de novo*, yet it was often difficult or impossible to say whence they came. The latter portion of the address was devoted to a discussion of the matter of inter-provincial registration, which he favored, and which he thought it was in the power of this Association to bring about.

A vote of thanks was moved by Dr. Bayard, of St. John, seconded by Dr. Hingston, of Montreal, and carried with much enthusiasm. Dr. Wright, of Ottawa, moved, and Dr. I. H. Cameron, of Toronto, seconded, that a committee be appointed, representing the various provinces, to consider the suggestions made in the President's address, in relation to the question of inter-provincial reciprocity in medical practice.

Appendicitis.—DR. JAMES BELL, of Montreal, read a paper with this title, which was based upon the results of his work in the Montreal General Hospital during the past eleven months. He had had forty eight cases, of which forty were operated upon; all of the patients, both those operated upon, and those treated expectantly, recovered, except three. The speaker believed that all cases of appendicitis should be in the hands of the surgeon from the beginning of the attack, and in the majority of instances an operation should be resorted to as soon as the diagnosis was definitely established.

DR. HINGSTON, of Montreal, discussed the question from the conservative side. He had prevented the operation, he said, about thirty times, and only in one case did he regret that he had not counselled the surgical intervention. He did not want the younger members of the Association to go away with the idea that operation was the first thing to be thought of in every case of appendicitis they might have. They could not argue from the results of Dr. Bell's cases, for in the first place Dr. Bell was an able and experienced surgeon, and in the second place the cases that came under his care were for the most part of a very serious character and really calling for operation.

SIR JAMES GRANT, of Ottawa, reported two cases he had had which seemed at first to be fit for operation, but one was in a gouty and the other in a rheumatic subject. He did not operate, and both cases recovered. He did not believe that the cause of the inflammation in these cases was the presence of a foreign body in the vermiform appendix.

DR. SHEPHERD, of Montreal, pointed out that the surgeons always got the worst cases, so that it was difficult from a comparison of statistics to determine just what was the proportion of cases which should be operated upon and how many should be treated by medical means. His idea was, as a rule, to operate after the acute attack had subsided. He thought that the tender-point of McBurney should be referred not to the appendix but to the inflamed condition of the mesenteric glands, for the appendix might be found on the right side, in the pelvis or up under. Strange was in favor of non-interference until the presence of pus could be made out. He had usually refrained from operating during the acute stage, and had never had cause to regret it.

DR. CAMERON, of Toronto, said he followed Treves in this matter; wait until pus forms, then open and drain. He thought that it would be unfortunate if the experience of a hospital surgeon of skill should be permitted to determine the matter one way or the other.

DR. BELL, in reply, said that it was conceded by all that no man could say definitely just when to operate in all cases. Out of the forty cases in which he had operated there was perforation in thirty-two; in three the appendix was gangrenous, in two it was bound down by adhesions; in three other cases the symptoms pointed to very grave inflammation, yet no abscess was found and the gut was not perforated. He used to follow the expectant plan, and his losses were much greater than now. The most extreme mortality after these operations is two or three per cent. If the patients were let alone, perforation and collapse might occur at any moment. The very mild, or rather short, cases in which all the symptoms

passed away within twelve hours, need not be interfered with, for they were probably cases of cæcitis. He believed that the method advocated by Treves was not according to the principles of true surgery.

Eye-strain Headaches.—Dr. Morrison, of St. John, read a paper with this title. These headaches had been treated by tenotomy, but this was dealing with the effect only and not with the cause; the operation relieved some of the reflex troubles for a time, but the ultimate result was not good. The real trouble was an imperfect curvature (it might be very slight) of the cornea. This condition added to the work of the delicate muscles of accommodation, when much near work was to be done with the eyes, and overtaxed the ciliary muscle, from which resulted the distressing reflex headache. The pain was usually situated in the neighborhood of the temples, but sometimes extended to the occiput and down the back of the head. Numbness sometimes occurred in other parts of the body, and digestive disturbances were likewise at times a marked symptom. A proper correction of the myopia, hypermetropia, and astigmatism, together with the administration of tonics, removed the insufficiency. The speaker reported some of the cases of headache that he had been called upon to treat, where the proper management of the trouble had been neglected because no examination of the eyes had been made. The muscle would recover just as a sprained limb would if properly treated. The use of suitable glasses was a crutch for the over-strained ciliary muscle.

Diseases of the Ovaries and Fallopian Tubes.—Dr. Lapthorn Smith, of Montreal, followed with a paper on the treatment of diseases of these organs. The subjects of gonorrhœal and tuberculous salpingitis, tumors of the ovaries, and ovarian congestion were dwelt upon, their most prominent symptoms pointed out and their treatment sketched. Many cases were reported and numerous pathological specimens shown.

Influence of the Mind Upon the Body.—Dr. Bayard, of St. John, delivered the Address on Medicine, taking this as his title. He gave a brief résumé of the general anatomical and physiological features connected with the nervous system, and pointed out that various mental phenomena were causative of marked changes in the body, particularly in respect to the action of the vasomotor nerves. He had known pain to disappear in the presence of sudden danger, and he quoted Hunter as saying: "My life is at the mercy of any scoundrel who chooses to put me in a passion," and, strange to say, that was the cause of his death. It is believed that the elaboration of the blood constituents is interfered with when the individual is under emotional excitement. The speaker then discussed many of the various nervous troubles so common at the present day, and suggested methods for their treatment.

In connection with one of the points referred to in the address, Dr. Bayard moved, and Dr. Hingston seconded, that in the opinion of the Association, the system of education generally pursued in the Dominion of Canada draws too largely upon the brain-tissue of children, and materially injures their mental and bodily health. It was objected that this resolution was too sweeping in its wording, and that there was no suggestion as to what department of the school system was at fault, nor as to what portion of the Dominion the strictures more especially applied. Our young people, Dr. Cameron said, were not suffering from too much education, neither were their elders for that matter. The educational system had been the subject of the best thought of the best men in the country, and he believed the motion was altogether too condemnatory. A resolution was than passed that the matter be referred to a committee, consisting of Drs. Powell, Hingston, Graham, and Bayard, to report at the next meeting.

Functional Hepatic Disorder.—Dr. J. E. Graham, of Toronto, presented a communication entitled "Some Functional Derangements of the Liver," in which he reviewed the history of the physiology and pathology of the liver, and showed that there are other and no less important functions of the organ than the secretion of bile. He outlined the work of the liver and demonstrated the very important functions that it has to perform in the human economy. Its importance as a blood elaborating and fat-forming organ in the fœtus must be great, since we know that it is equal in weight to all the rest of the body at the end of the first month, in the proportion of one to three at the end of the third, and of one to sixteen at the end of the fifth month. The speaker then discussed the question of "hepatic inadequacy," a condition induced by the action of certain poisons upon the hepatic cells. The hepatic cells stored up the glycogen until it was needed by the economy, and when this function was impaired various clinical phenomena were observed. As regards the treatment of "biliousness," the exact cause of this condition should be searched for and found, if we were to hope for success in relieving the trouble. The diet should be most carefully attended to; starchy foods should be absolutely forbidden, but milk, because of its ready assimilation and diuretic action, should be regarded as of great value. The reader recommended certain forms of exercise as of value in assisting the circulation. Massage over the gall-bladder, as promoting the egress of bile, is helpful, and free purgation is essential. He then discussed the various drugs used in hepatic disorders, calomel, euonymus, podophyllum, etc., and their several indications. When the elaboration of urea is incomplete, treatment directed toward an increase of metabolism—massage, bathing, the drinking of mineral waters, etc.—is to be recommended. The great point to aim at is to secure and, if possible, restore the integrity of the hepatic cells.

Brain Operations.—Dr. Hingston, of Montreal, reported four cases of brain operation, two of which were for epilepsy. One was for the relief of paralysis of certain muscles of the arm in a young man who had received an injury to the skull some twenty years before; there was also spasm of some of the muscles of the face. The operation afforded almost complete relief. The speaker employed a trephine two inches in diameter, which he contended was much superior in some respects to those in ordinary use and of smaller size.

Amputation at the Shoulder-joint.—Dr. Shepherd, of Montreal, related the history of a case in which he had removed the entire upper extremity for a chondro-sarcoma involving the shoulder joint, and another of removal of a large enchondroma of the pelvis. The first operation had been but seldom performed, this being the first that was on record as having been done in Canada.

The paper was discussed by Drs. Hingston, Cameron, and Steves.

Prevention of Tuberculosis.—Dr. Inches, of St. John, read a paper with this title, in which he advocated the necessity of increased activity on the part of the profession, the public, and the government in dealing with this disease. The patients themselves needed much instruction in regard to the disinfection of sputa, so as to lessen the danger to others in the house. Even in well-kept consumption hospitals, he said, there is some danger of infection. He dwelt upon the difficulties connected with notification, registration, and isolation. He had found it very difficult, even among his wealthy patients, to secure isolation and fresh air, and of course it is infinitely more difficult to secure such among the poorer classes, who are often not in position to carry out the necessary measures looking to this end. The speaker held that special sanitaria should be established, so that every patient who could not be properly looked after at home might find a place where his necessities could be attended to.

Treatment of the More Ordinary Skin Diseases.—Dr. L. Duncan Bulkley, of New York, read an interesting paper on the treatment of skin diseases by the general practitioner. He said that there were really only a few skin diseases that made up the bulk of those coming under the care of the general practitioner, and if we learned to

diagnose and treat these we should be in position to cure the greater number of diseases of the skin; the few rare cases could be sent to a specialist. He urged the necessity of paying more particular attention to each individual case, and of not treating all alike because they had a disease with a common name; routine should be avoided, and careful inquiry should be made into every detail of the patient's system and habits. The history of the eruption, and of former eruptions, the family tendencies as to the presence of asthma, rheumatism, etc., should all be made the subject of painstaking inquiry. If the general practitioner were well acquainted with acne, eczema, and syphilis, he would be able to treat satisfactorily the majority of cases of skin diseases that came under his care. As to eczema, too much was often done—the disease was over treated. He had grown more and more convinced of the great necessity of constitutional treatment in all these cases of skin affections, and had often had occasion to observe that the correction of some fault in diet or mode of life was sufficient to effect a cure. The speaker further emphasized some of the more important points to be observed in the treatment of acne, syphilis, psoriasis, and urticaria.

The Contagiousness of Tuberculosis.—Dr. J. F. Macdonald, of Nova Scotia, read a paper with this title, in which he advocated the bringing of the matter of the contagiousness of this disease before the people through the medium of the public press. He favored a system of registration, careful disinfection, government inspection of infected places, the establishment of sanitaria, and the enactment of laws to hinder the infected from spreading the contagion.

Nasal Cauterization.—Dr. Kirkpatrick, of Halifax, presented a communication on the subject of cauterizations of the nasal mucous membrane, in which he uttered a warning note against the indiscriminate introduction of strong caustics into the nasal cavity. He had seen entire destruction of the membrane and other serious consequences follow an abuse of these remedies, which were, however, of such exceeding value when properly and judiciously employed.

Other papers read were: "Adhesions of the Soft Palate, and their Treatment," by Dr. Hamilton, of Montreal; "The Present Status of Asthenopia," by Dr. Buller, of Montreal; "Hysteropexy," by Dr. K. N. Fenwick, and "A Medico-legal Romance," by Dr. Steves, of St. John.

After the customary votes of thanks, the meeting was closed by the President. It was decided to hold the next meeting of the Association in Kingston, Ontario.

Typhoid Fever and Vaccination.—Doctor William Finder observed that after typhoid fever patients recover they are very susceptible to vaccination. This observation has been verified many times during a number of years, and the writer suggests that others confirm or disprove the theory. So satisfied is Dr. Finder with the correctness of the observation, that he now revaccinates his typhoid patients as soon as they recover from the fever.—*Medical News.*

Erysipelas Toxins in Malignant Disease.—The following are the conclusions of Dr. William B. Coley, in an article on this subject in the *American Journal of the Medical Sciences* for July, 1894: 1. The curative action of erysipelas upon malignant tumors is an established fact. 2. This action is much more powerful in sarcoma than in carcinoma. 3. This action is chiefly due to the toxines of the erysipelas streptococcus, which may be isolated and used with safety. 4. This action is greatly increased by the addition of the toxines of bacillus prodigiosus. 5. The toxines, to be of value, should come from virulent cultures and should be freshly prepared. 6. The result obtained from the use of toxines without danger are so nearly quite equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.

AMERICAN MEDICAL ASSOCIATION.

Forty-fifth Annual Meeting, held in San Francisco, Cal., June 5, 6, 7, and 8, 1894.

(Continued from Vol. 45, page 799.)

SECTION ON PRACTICE OF MEDICINE.

THIRD DAY, THURSDAY, JUNE 8TH.

Typhoid Fever.—Dr. John Eliot Woodbridge, of Youngstown, O., read a paper on this subject in which he claimed that typhoid fever, if a germ disease, and of this he felt confident, could be aborted. The disease was, he said, on the increase, and was limited by no geographical lines. The author claimed that he could cure every case of typhoid fever if he saw it early enough. Treatment by means of antiseptics such as thymol, guiacol, eucalyptol, etc., was the course pursued by him in these successful cases.

Diagnosis and Treatment of Diseases of the Stomach by the Stomach-Tube.—Dr. A. W. Perry, of San Franciso, Cal., stated that most disorders of the stomach depended upon fermentations or abnormal accumulations in quantity or quality in that organ. The fermentations were acetic, lactic, butyric, cellulose, etc. Lactic-acid fermentation develops normally within fifteen to twenty minutes after digestion commences, but is held in check by the hydrochloric acid of the gastric juice. Acetic and butyric fermentations are prevented by a more rapid and complete emptying of the stomach. By means of the stomach-tube we can determine dilatations, and determine the chemical composition of the stomach contents. Spasm of the glottis may interfere with the introduction of the tube. To overcome this the speaker is in the habit of touching the back of the pharynx with his finger. Cocaine may be used. In some cases the circular fibres of the œsophagus contract and thus obstruct the passage of the tube. Reflex spasm of the glottis is the obstacle in the greater number of cases. The stomach-tube should be used only every other third or fourth day. During the intervals the internal administration of an antifermentative is recommended. The speaker uses resorcin, gr. v., after meals, and finds this does not interfere with the digestive processes. The use of the stomach-tube will prove valuable in the diagnosis of cancer and ulcer of the stomach, by allowing a quantitative test for hydrochloric acid.

The author finds lavage of benefit in the treatment of the following stomach disorders: Acute and chronic gastric catarrh, dilatation of the stomach, not dependent upon pyloric stricture, various fermentations, causing reflexes, cancer, ulcer, and finally in obstinate singultus.

Dr. Freeman, of Indiana, commended the paper and suggested a method to render the œsophagus tolerant. In his experience he found that by the frequent use of the œsophageal bougie between the acts of lavage the œsophagus established a tolerance of the tube.

The Law of Equivalence in Medical Science.—Dr. R. W. Murphy, of San Francisco, Cal., expressed the belief that before many years have passed prophylactic measures will be discovered for such diseases as Bright's disease, cancer, tuberculosis, etc., as has already been the case with the small-pox, hydrophobia, etc. He called attention to the great diversity of treatment directed toward the same disease, and believed we should have more practical text-books and drug action, both as regards maximum and minimum dosage.

He predicted that the physician of the future would be the man who closely watches the dual action of his drugs. In the case of calomel, cited as an instance, we may find physicians recommending a dosage varying from $\frac{1}{20}$ grain to 60 grains for the same disease and under apparently the same conditions. The same may be said regarding almost all of the drugs in use.

Among other remedial agents electricity is largely employed without thought of the law of equivalence. Experiments should be a thing of the past.

The following papers were read by title: "Cham-

pagne and Strychnine in Chest Troubles of the Aged," by Dr. Edward Buxton, of National City, Cal.; "The Treatment of Erysipelas," by Dr. James M. Anders, of Philadelphia, Pa.; "The Use of Turpentine in the Treatment of Diphtheria," by Dr. E. W. Kellogg, of Milwaukee, Wis; "Lung Gymnastics in the Treatment of Chronic Disease," by Dr. L. P. Walbridge, of Decatur, Ill.; "A Clinical Study of Scarlatina at High Altitudes," by Dr. J. N. Hall, and Dr. William P. Munn, of Denver, Col.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, April 25, 1894.

GEORGE C. FREEBORN, M.D., PRESIDENT, IN THE CHAIR.

Abnormalities of the Heart.—DR. L. PEARCE BAILEY presented two specimens showing abnormalities of the heart. The first one showed a fourth cusp to the aortic valve, and also some vegetations. The second specimen was from a child who had died at birth from prolapse of the umbilical cord. A fibrous cord was found stretched across the aorta.

Primary Thrombosis of the Pulmonary Artery.—DR. GEORGE P. BIGGS presented specimens of the above. A man, forty-seven years of age, had been brought to the New York Hospital in a bad condition, supposed to be suffering from pneumonia. No history was obtainable, and he died a few hours after admission, and without a careful record of the case having been made. At the autopsy the first feature of interest observed was a great depression of the diaphragm, especially on the left side. On the right side it was at the fifth intercostal space, and on the left at the eighth intercostal space in the mammary line. It had pushed the spleen down until its upper border was on a level with the upper border of the left kidney. From the left pleural cavity 1,200 c.c. of a greenish serum had been collected, and this fluid was found to contain fibrin in considerable quantity. The heart was so much displaced as to be almost entirely to the right of the median line. The entire left lung, with the exception of the upper half of the upper lobe, was compressed by this fluid. The pleura was thickened and in the recent state was covered with fibrin. There was no evidence of a recent tubercular process in the lung itself, or in the pleura, except at one point—a small cheesy nodule in the parietal pleura. On scraping this and staining it, it was found to contain a large number of tubercle bacilli.

The pleurisy, the speaker said, was probably of tubercular character, although the lesions of tuberculosis in the lung appeared to be all of a chronic character. The lung of the opposite side was poorly aërated. There were a number of adhesions at the apex, and in the upper half of the upper lobe were a number of pigmented fibrous cicatrices with small cheesy areas scattered through it. The pulmonary artery going to the lower lobe contained a large ante-mortem thrombus, which was rather soft, but distinctly adherent to the vessel wall just beyond the origin of this branch from the main pulmonary artery of that side. The pulmonary tissue supplied by this vessel was very much congested, but was not œdematous, and there was consolidation. The thrombus seemed to have almost entirely occluded the lumen, but the usual effects of thrombosis were not very well marked. The heart was not nearly as much dilated as one would have expected with such extensive impairment of the lungs. The valves were normal except for slight atheromatous patches near their bases on the left side. The coronary artery showed quite marked atheroma, especially near its origin. The muscle of the heart appeared to be perfectly normal. There were no other lesions of importance. The pericardium was not affected.

The speaker said that the first case of primary thrombosis which he had presented to the Society was thought to be very unusual, and some of the areas were thought to be pneumonia. He was sure that the case just presented was the fourth of the kind that he had seen this winter, in which all possible sources of emboli had been sought for, yet none found. One of the other cases was quite similar to this one, the opposite pleural cavity being filled up with fluid. From the appearance of the organs in this case at the autopsy, it was not evident why it should have resulted in this way, except that the fluid had been allowed to remain so long that it had interfered with the action of the heart and the circulation in the opposite lung, thus causing death.

Small Round-cell Sarcoma of the Ovary.—THE PRESIDENT presented the half of a sarcomatous ovary which had been removed from a married woman, twenty nine years of age, who had had one child five years before. The tumor was supposed to have begun its growth shortly after the birth of the last child, four and a half years ago. It continued to grow until it measured 16 x 12 ctm., and weighed 1,100 gm. If this history were reliable, it would seem to indicate a very slow growth for a small round-cell sarcoma.

Sarcoma of the Ovary.—The President also presented a sarcoma of the ovary engrafted on an ordinary cyst-adenoma. The specimen had been removed from a woman forty five years of age, who had had five children, the last one fourteen years ago. This tumor had been first noticed nine years ago. She had suffered from flooding at intervals up to one year ago. The tumor had remained about the same size until two months ago, when it had suddenly began to grow very rapidly. At the time of the operation it measured 26 x 13 ctm. On close examination the central portion of the tumor was found to be made up of an ordinary cyst-adenoma, and small cysts filled with colloid material. Around the periphery was a sarcomatous mass—a mixture of small and large round cell sarcoma in which the large cells seemed to predominate, and the stroma was rather scanty.

The speaker said he thought it had been an ordinary cyst-adenoma up to the time when the growth had become so rapid, and that at this time the sarcomatous degeneration had begun. Probably, if the tumor had been left alone the whole mass would have been converted into a sarcoma. This was one of the first well-marked examples of sarcomatous degeneration that he had met with. He had examined upward of 1,000 ovaries, and out of this number had found only from five to seven sarcomata.

DR. GEORGE P. BIGGS referred to one case of large cystic tumor of the ovary which he had seen, in which, from the gross appearance, it was thought to be multilocular cyst, but on microscopical examination it had been found to be distinctly made up of sarcomatous tissue, as if a change had begun to take place in it similar to that found in the specimen just presented.

DR. FREEBORN said that on a previous occasion he had presented, in connection with a large series of ovarian tumors, one other specimen of sarcomatous degeneration. It was a multilocular cyst which had been reduced to three main cysts. On microscopical examination the septa of these cysts had proved to be sarcomatous.

DR. S. T. ARMSTRONG said that the only case he had seen was in 1880, in the female hospital in St. Louis. The patient was an unmarried woman who had been previously confined in an insane asylum for acute mania for three years. No abnormal condition connected with the ovary had been found. She recovered from the mania, and finally entered the hospital in a wretched condition. She died shortly afterward.

DR. THOMAS H. MANLEY said that solid tumors of the ovary were sometimes carried for years with but little inconvenience except that due to weight, and he was familiar with a few cases occurring in those past the menopause, in which there was no question about a reduction having taken place in the size of the growth, and having been accompanied by an amelioration of the symptoms. He would ask whether this sarcomatous degeneration was to be regarded as a malignant change,

or rather as a process whose object was to hasten resorption. He had seen a specimen exhibited recently at the Harlem Medical Association by Dr. McLean, in which a tumor had been honey combed, leaving only a core.

The President said he did not think that anyone had ever seen a carcinoma or adenoma in the abdomen disappear, except by operation. It was well known now that after the menopause solid tumors of the ovary and uterus did increase in size, but he thought that in the vast majority of cases, if these tumors could be examined and their structure determined, it would be found that they belonged to the fibroid order. He could not accept the theory that this sarcomatous change was a conservative effort of nature, because in his case the history showed that two months ago there had been a rapid increase, and from both macroscopical and microscopical study, it appeared that this sarcomatous change had taken place at the time that the growth of the tumor had become so rapid. The tumor referred to by Dr. Manley was a pure cystic sarcoma which had probably started as a solid sarcoma. It had overgrown itself, so to speak, and hence necrosis had taken place in the central portion. This was not the condition in his specimen.

The Society then went into executive session.

Stated Meeting, May 9, 1894.

George C. Freeborn, M.D., President, in The Chair.

A Lacerated Spleen.—Dr. Thomas H. Manley presented a lacerated spleen. It had been removed from a young sailor who had fallen from a mast, a distance of twenty feet, and striking against a rail, had sustained an injury in the region of the spleen. There was no disturbance of the sensorium, but there was profound and persistent shock, and he was in this condition when first seen by the speaker in consultation with his colleague, Dr. Charles B. White. There was no visible injury to the abdominal wall, and no distinct dulness on the injured side. There had been slight retching, but no vomiting except a little mucus. The symptoms pointed to internal hemorrhage, or to perforation of the intestine. The only pain complained of was localized below the left nipple. Assuming that there might have been a perforation of the intestine, laparotomy was resorted to. The peritoneal cavity was found to be filled with blood which was escaping freely from the spleen. A portion of the border of this organ had been torn nearly off. The lacerated fragment was quickly ligated and removed, but the man died on the operating-table.

The speaker said that he did not think it was possible in the living subject to produce a laceration of the spleen by a blow or fall, unless this violence was sufficient to produce disorganization of the overlying muscular tissues, which was not the case in this instance. His theory was that, as the man was only about twenty years of age, and the bones were not yet fully ossified, the spleen had been caught by the movable thorax and crowded up against the spine. He would like the opinions of the members on this point.

Dr. T. M. Prudden said he had seen several cases in which there had been laceration of the liver without injury to the abdominal wall.

The President said that within the past eighteen months several cases of extensive rupture of the liver had been presented to the Society, and in these there had been no evidence of injury to the abdominal walls.

Cranio-Tabes.—Dr. Thomas S. Southworth presented a specimen of cranio-tabes. The calvarium was very thin, and showed the condition of cranio tabes particularly well on the left parietal bone. The specimen had been taken from a child of about nine months, who had given every evidence of rachitis. It had been thought at one time that possibly hydrocephalus was developing, but the measurements of the head were found to be no greater than normal. At the autopsy no unusual quantity of fluid was found in the ventricles of the brain.

Uric-Acid Infarcts of the Kidney.—Dr. Southworth also presented a specimen from the same child, showing uric-acid infarcts of the kidney. He said it was not uncommon to find in the newly born, that the pyramids of the kidneys were filled with minute particles of uric acid or urates, but masses of the size shown in this specimen were certainly unusual. This condition raised the question of clinical interest—were these masses dissolved and absorbed, or were they passed along the ureters? If the latter occurred, it would afford an explanation of much of the colic and persistent crying of young infants.

Dr. O. C. Ludlow said that his clinical experience had abundantly confirmed the truth of this suggestion about the causation of much of the colic in the newly born. It was not uncommon to see such a sediment on the the diaper, or about the meatus urinarius, and under such circumstances it would be found that the administration of alkalies would quickly relieve the colic, and at the same time cause the disappearance of the sediment.

Sarcoma of the Antrum of Highmore.—Dr. R. C. Myles presented the pterygoid process and posterior part of the antrum of Highmore, and the pterygoid muscles, which had been removed from a case of sarcoma of the antrum of Highmore. The patient was a man thirty years of age, who had been referred to him by Dr. Wyeth for examination. A portion of tissue removed by the curette from the antrum was submitted to Dr. Prudden, who found it to be a large round-cell sarcoma. It was growing very rapidly. All of the sarcoma, as well as the superior maxilla, were removed by Dr. Wyeth two months ago. The patient is doing well, and so far there has been no recurrence. At first, owing to the loss of the pterygoids, the mouth was drawn to one side, but practice had overcome this difficulty. These cases of malignant disease of the antrum were not usually diagnosticated until the disease was far advanced. There were ordinarily very few symptoms, and hence at first these cases were apt to be obscure. He thought, if diagnosticated sufficiently early, all of them would recover. He would therefore strongly advocate an exploratory operation for diagnostic purposes.

Exostosis and Ecchondroma of the Vomer was also presented by Dr. Myles. It had been situated between the perpendicular plate of the ethmoid and the vomer, just beneath the sphenoid bone. He had found that in nearly every instance the cartilage had extended up to, or very nearly up to, the sphenoid bone. The specimen was concave on one side.

A Water-sampling Apparatus.—Dr. T. M. Cheesman exhibited the apparatus. He said it involved no new principle, but was an adaptation of a device described in "Fluegge's Micro-Organismen," and originated, he believed, with Pasteur. Its object was to collect a sample of water from a given level in a vacuum bulb by breaking off the end of the capillary tube when the bulb had reached the desired level in the water. Glass bulbs, 2.5 ctm. in diameter, and having a neck 2 ctm. in length, are drawn out into capillary tubes, and these are given a double bend. The gaseous contents of the bulbs are then driven out in the usual way by evaporating a few drops of water in them, and then sealing the ends. In such a bulb the surface of tap water could be easily collected by breaking off the end of the tube with the finger. The sample thus obtained should then be placed in a large, cotton-plugged sterilized tube, and carried in an ice pail to the laboratory. The object of the apparatus exhibited was, however, to facilitate obtaining samples at different depths or from inaccessible places. It had been suggested by Dr. Prudden, and had been elaborated by the combined talent of several others. Its utility had been fully demonstrated in actual practice.

The apparatus consists of a metal tube of small calibre, and about one metre in length, divided off into

equal parts. To the lower end of this tube are soldered two rings for supporting two vacuum bulbs. Beneath these two rings are two broken rings arranged to slide on the end of the tube. They are held in place by a rubber strap or band.

In collecting samples, the capillary ends of the bulbs are broken off when they have been immersed respectively at the levels from which it is desired to take samples of the water. The breaking off of these ends is accomplished through the instrumentality of small copper wires attached to their bent ends, and actuated by the finger of the operator. Breakage is facilitated, and fracture at the desired point is insured, by making a cut previously in the glass with a file or diamond at the proper point.

Formalin and Bacterial Growth.—Dr. Cheesman also exhibited specimens showing the effect of formalin in arresting the growth of bacteria, and its effect on gelatine already fluidified by bacterial products. Formalin, he said, was a forty per cent. solution of formaldehyd ($C H_2O$), a gaseous body produced by subjecting methyl alcohol to oxidation. It is soluble in water in all proportions, and is placed on the market in a forty per cent. solution. As it is very inflammable, care must be taken about employing it near a light or fire, and it is important that the preparation should have been recently prepared, as it loses its properties by keeping.

Dr. Cheesman then exhibited the following specimens:

The first one was a potato which had been cut in half without antiseptic precautions, and one-half smeared with the soil clinging to the outside of the potato, and the other half with a culture of B. prodigiosus. Both halves had been kept for fourteen days in an air-tight jar, charged with the vapor of formalin. No growth had developed.

The second specimen showed the effect of formalin vapor upon a culture of B. mycoides in gelatine, grown for three days at a temperature of an ordinary room before being subjected to the formalin vapor. The growth had been arrested and the fluidified gelatine on the surface had become solid. The medium still remained clear, but had undergone a slight change in color.

The third specimen was a "roll tube" of B. subtilis, one of the most actively fluidifying species. The growth had been arrested by the formalin vapor.

The fourth specimen was a water-plate upon which, after two days of growth, about 1 c.c. of formalin had been placed, and the cover sealed on with paraffine. The growth had been completely arrested.

The speaker said that formalin had the peculiarity of rendering solid gelatine which had once been fluidified by bacterial products. So far as he knew, ordinary gelatine as well as that which had been fluidified by bacteria, was thus rendered incapable of being liquefied by heat. It was claimed by those who had introduced formalin, that the microscopical appearances of the bacteria colonies were not affected by the formalin. If this were true, it would be useful for making microscopical "mounts" of colonies cut from gelatine plates. The cut section from the gelatine could be placed on a slide, surrounded by gelatine, covered with glass, and placed in an atmosphere of formalin. It could be varnished to prevent drying.

The President remarked that he had seen a published statement by one experimenter, to the effect that the heat from a Bunsen burner would char the gelatine which had been acted upon by formalin, but would not fluidify it.

Epithelioma of the Hand.—Dr. Henry Power presented microscopical sections of an epithelioma of the hand. According to the clinical history, the patient, a man seventy-five or eighty years of age, had had an epithelioma on the back of the hand for about eight years. He suddenly developed marked jaundice, emaciated rapidly, and died in eight weeks. At the autopsy the organs were found to be normal except the liver and gall-duct. The latter was distended and contained some gall-stones. There was a growth in the neighborhood of the common bile-duct, which completely occluded it. It seemed to be composed of adenoma, some fibroma, and in places closely resembled in structure the epithelioma of the hand. The latter showed very large epithelial "pearls," and also some peculiar cells which gave the appearance of having a thick capsule.

New Instruments.

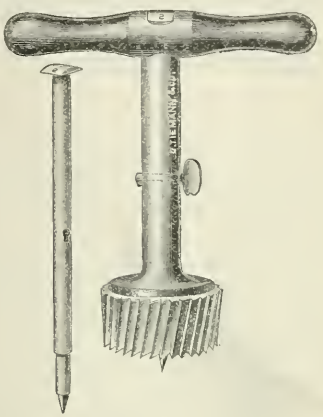
A NEW ASEPTIC TREPHINE.

By EMORY LANPHEAR, M.D., Ph.D.,

St. Louis, Mo.

Professor of Operative Surgery and Clinical Surgery in the St. Louis College of Physicians and Surgeons.

Surgeons who have had much experience in opening the skull by means other than the chisel, will bear out my assertion that the ordinary Galt trephine is not and cannot be made aseptic; furthermore, it is exceedingly liable to get out of order at a most inopportune moment. The Roberts trephine was made to overcome this difficulty; while it is a thoroughly aseptic instrument, it possesses the disadvantage of being liable to drop to pieces at the most unfortunate and critical point of the operation; otherwise it is perfectly satisfactory. Bearing in mind the faults of these two instruments, I have sought to remedy the deficiencies by the invention of the trephine here pictured.



This instrument consists of but three pieces; it can be taken apart in an instant; and is thoroughly aseptic. The sharp blade is attached to a large, strong metal handle through which passes the centre-pin, held in place by a little key which transfixes shaft and pin. Upon withdrawal of the key the centre pin can be removed without taking the saw from its groove, if so desired. The hole for the centre-pin is large, of smooth bore, and can be readily cleaned with a piece of gauze, and the whole instrument can be boiled without danger of rusting.

Acknowledgment of indebtedness to Messrs. Tiemann should be made for valuable suggestions in regard to modification of original plan.

Trismus Neonatorum.—Dr. I. Stefanesco, writing in *Spitalul*, No. 8, 1894, says that the greatest mortality among the new-born in the district of Ilfov, in Roumania, is from tetanus arising from infection through the umbilicus. In a careful study of a series of these cases he has found that the chief cause of this infection is the practice, very common among women in the country districts, of being delivered lying on a bed of straw in supposed imitation of the Virgin Mary.

A NEW UVULATOME.

By SAMUEL GOLDSTEIN, M.D.,

NEW YORK.

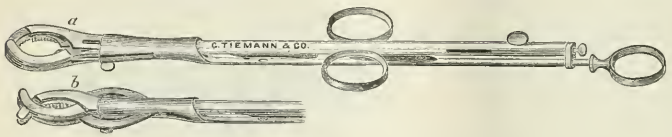
ASSISTANT SURGEON, NEW YORK THROAT AND NOSE HOSPITAL; ASSISTANT SURGEON, OUTDOOR DEPARTMENT, MOUNT SINAI HOSPITAL.

Amputation of the uvula, in vogue even as far back as the Hippocratic era, is to-day classed among minor operations upon the throat. The instruments used during primitive ages hardly find a place in the armamentarium of the surgeon of this progressive age. Then the unfortunate possessor of this organ, when hypertrophied or relaxed, suffered much torture in its abscission. Even to-day, with the many modified and complicated instruments, the patient is often compelled to undergo much shock through delay in the proper working mechanism of such appliances.

With the means at hand, however, the general practitioner, as well as the specialist, finds no hesitancy, when deemed necessary, in removing a portion of this organ.

After having tried many of these instruments with the usual amount of success, I was compelled to resort to the use of the forceps and curved scissors.

In the use of these simple instruments, both hands of the operator are engaged; the tongue must be depressed



either by the patient himself, or by the aid of an assistant.

The patient is left in full possession of his senses, and comprehends fairly well what is about to ensue.

That alone to the sensitive mortal creates very often a feeling akin to fear, and a wish that the operation were speedily performed.

It has been my experience, in the main, in amputating the uvula, to meet a class of patients whose throats, on account of the condition of this pendulous organ, were extremely sensitive, and to whom the touch of the tongue depressor, unless very carefully used, occasioned considerable gagging.

This would delay and prolong operative work.

In just such cases I have experienced much difficulty in having the patient properly depress his tongue, thus preventing expeditious and successful performance of this otherwise simple operation.

With these facts in view, believing that some simple contrivance could be planned whereby the surgeon himself could perform the entire operation, without intervention of either patient or assistant, I have made this uvulatome, hoping that it will supply for others, as it has for me, a long-felt want.

In drawing the plans, I have endeavored to keep in view the following points:

1. That the instrument be so constructed as to *fit* and *cut* uvulæ *of any diameter*, whether hypertrophied or relaxed.

2. That the knife be concealed, so as to give the patient no cause to fear operative procedure.

3. That the entire operation be performed by the surgeon himself.

4. That the instrument can be readily taken apart for cleaning.

This uvulatome consists of an upper and lower set of rings or claws, and between these a concealed knife.

Each set of claws (there being two segments to each set) is attached to a staff. A cannula incloses them at their narrowest parts. It is by the backward and forward movements of this cannula (at the lower end of which is a ring for the thumb) that the claws are drawn together, holding the uvula firmly, and relaxed, releasing the uvula.

Between the staffs of the claws is the staff of the knife (which is released by the cannula being pushed forward, lifting a catch) to which two rings are attached. The knife glides between the two claws and its action depends upon the backward and forward movements of the index and middle fingers in the rings attached to the staff.

Each set of claws is so arranged that the tongue of the one fits between the two lips of the other.

The upper set have their inner surfaces smooth, so as not to injure the stump of the uvula, while holding it firmly; the lower claws have their inner surfaces serrated, in order to better hold the amputated part, after the uvula has been cut.

The working mechanism is as follows:

The uvula is examined, and the exact amount to be amputated is determined. The surgeon depresses the tongue with the left hand (holding the uvulatome in the right), and with the thumb in the ring at the end of the cannula, and the index and middle fingers in the rings on either side of the staff of the knife, place the uvulatome in position, encircling the uvula.

The thumb ring is pushed forward (from the operator), thus pushing the cannula over the claws, and bringing them together grasping the uvula tightly; then with the index and middle fingers, pull backward (toward the operator), cutting through the uvula.

The operator should bear in mind, that it is very important to first grasp the uvula well with the claws, before bringing the knife into action.

To release the stump, the opposite action of the thumb opens the claws; and likewise, the opposite action on the staff of the knife pushes that backward.

The amputated portion of the uvula will be found caught in the serrated teeth of the lower set of claws, which for this purpose are made to fit closer together, so as to grasp the part of the uvula about to be cut, more tightly.[1]

I wish to express my thanks to Messrs. Geo. Tiemann & Co., for the excellent and thorough manner in which they have executed my plans.

166 East Ninety-third Street.

The Predilections of French Women Students.—Of the total number of women university students in Paris, 155 are on the list of the medical faculty, 164 on the list of the faculty of letters, 7 in the department of science, and 3 in that of law. Of the 155 medical students, however, only 16 are Frenchwomen, while of the 164 students under the faculty of letters, 141 are of French birth.

Gold Mines in Cemeteries.—A writer in *Le Temps*, of Paris, has been travelling in America, and, of course, relates his "impressions." What struck him particularly was not the Falls of Niagara, the inquisitiveness of reporters, or the consumption of pie, but the fillings in American teeth. He has consulted the statisticians and finds that the amount of gold annually pounded into our dental cavities reaches the respectable figure of 800 kilogrammes, representing a value of half a million dollars. All this precious metal is buried with the Yankees when they die, and consequently at the end of three short centuries the cemeteries of the United States will contain gold to the value of $150,000,000. He thinks this will prove too tempting to the practical mind of the future American, and foresees the day when companies will be organized to mine the cemeteries and recover the gold secreted in the jaws of deceased ancestors.

[1] Should troublesome hemorrhage follow the operation, the emergency can be met by reclamping the claws of the uvulatome over the stump, and keeping it in this position until all bleeding has ceased.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

HOLIDAY SIGNS—THE TEMPERANCE BREAKFAST—DR. LONG FOX'S ADDRESS—IS LUNACY INCREASING?—PROFESSOR JEBB ON THE UNIVERSITIES—A QUINQUENNIAL CENSUS—DEATH OF DR. C. R. ALDER WRIGHT—A STATUE TO SYDENHAM—THE NEW ELEMENT IN THE AIR—THE OPHTHALMOLOGICAL CONGRESS—THE MIDWIVES' QUESTION—POOR LAW SCANDALS—THE CHELSEA HOSPITAL—CHOLERA—SMALL POX—DR. WIGLESWORTH.

London, August 17, 1894.

The holidays have begun in earnest. The exodus from Bristol was rapid, and except a few who went to Oxford, most of our friends have left London. Still it is not quite accurate to say "London is left without doctors," as some people are fond of remarking; for there are plenty to do all the work that has to be done, and some of those who remain in town declare they have too much time on hand, and would be glad of more practice. After the Bristol week, with its discussions and unbounded hospitality, a little repose is a relief; and, then, a change of air will be most acceptable.

Among agencies at the Bristol meeting outside the Association the breakfast given by the National Temperance League was most notable. This is the twenty-fifth year in which the League has given a breakfast, and on this occasion Dr. Long Fox, the President of the Association, occupied the chair and delivered a most impressive address. He did not attempt to go over the old arguments nor to offer new ones respecting the temperance question, but contented himself with pointing out the immense influence of his professional brethren, and making an earnest appeal to them to use that influence aright. "We want more power and greater influence," said Dr. Fox, "and when we see whole families in the lowest state of degradation from the drunkenness of one parent or both, and now and then trace the change to prosperity on giving up the drink, it seems to me one of the strangest things on earth that anybody should shrink from being an apostle of temperance." When the cheers that greeted this sentiment had subsided the President added: "Speaking in the presence of some of the most thoughtful and excellent members of our body, may I say if we have light on this subject it behooves us to use it in a missionary spirit. We can do something in this way to remove the stones from the king's highway. The cry comes down to us, 'Watchman, what of the night?' It hath been long, O Lord! and very dark, but already over thine eternal hills the red light gloweth that heralds the approach of morning. Already out of the people of our beloved land some sixth part have shaken themselves free by thy grace from the hideous evil that tends to the destruction of the nation. We look for thy sun to rise ere long and flood this chosen country of thine with fuller and deeper light from thee. God grant that the coming generation may see a nobler and more effectual fight against this great evil, the most pregnant cause of poverty, disease, and crime. May the common-sense of England and the righteousness of England so permeate the daily life of the nation that, by and by, there will be no need of this society or of kindred societies, because the freedom of which we so justly boast will include freedom from all excess." Among the speakers who followed were Professor Murdoch Cameron, Drs. J. J. Ridge, W. G. Mackenzie, Roger Hughes, and Norman Kerr. All these made good points, but I may safely say not one produced so deep an impression as the testimony of Dr. Long Fox, who showed his earnestness by snatching time to attend this breakfast amid the numerous distractions to which he was subjected as President of the British Medical Association. This noteworthy breakfast was on Thursday morning. In the evening of the same day the dinner of the Association was celebrated as usual, when wine was served as freely as ever, and as much nonsense was talked as usual—so at least I gather; but I did not spend my evening at that dinner.

Is insanity on the increase, is a question that the newspapers have often taken up, sometimes giving expression to alarming forebodings. It has always seemed to me that the facts did not justify the sensational statements that have been freely circulated, and the "Report of the Lunacy Commissioners" does not substantiate them so far as I have been able to examine. The census statistics show that there is a considerable reserve of cases unknown to the commissioners, and this reserve has fallen from 17.7, in 1871, to 10.9 in 1891. In those twenty years the cases known to the commissioners increased from 82.3 per cent. to 89.1; but this only shows that a larger number had passed into asylums, and so became known to the commissioners. Statistics also show that new cases were fewer in the last decade than in the preceding one, and the increase so freely talked about is therefore partly due to the accumulation of cases, which has been brought about through the decreased mortality and increased longevity of the insane. There has been an increase in the ratio of insanity to the population, but it is all confined to the old, or rather to those above forty five years of age. It can hardly be supposed that this is due to new cases at advanced ages, and it seems clear that all the apparent increase has had no real existence. Improved treatment, greater willingness of the public to resort to asylums, decreased death-rate, increased longevity, accumulation of old cases, and other causes account for the figures, and we may reassure ourselves that the nation is not becoming insane.

Professor Jebb has published his very interesting address at the Cambridge University Local Lectures Association, in which he takes broad views of the duties of our old universities. The address is entitled "The Work of the Universities for the Nation," and is worthy of the professor's great reputation. Passing by his happy sketch of the earlier history of these seats of learning, he points out how they have enlarged their scope and have at length stepped out from their own gates to extend their influence in a wider sphere. No doubt many still have misgivings as to this movement; but so far it seems to have succeeded, and will probably be the means of drawing a larger number into nearer association with the universities. Mere technical instruction is not their proper work, but rather to bring students to see and apply general principles to all their work—even in the most technical employment. In no branch is the higher culture of greater importance than in the sciences which underlie medicine, and the influence of the universities on the profession is most important. Our relations with other learning have grown more intimate in spite of our devotion to science, and the Association has, I have no doubt, been mutually benefited.

London is to have a quinquennial census—to be begun in 1896. This is not undertaken for statistical ends in general, but in order to carry out the arrangements for the equalization of rates. This measure seems to be just, but the richer parishes will contain a considerable number of dissentients to this view. The County Council is to be saddled with the expense, which will amount to £6,000 or £7,000. No doubt it will tend to the accuracy of vital statistics and be useful for other purposes, but the manner in which it is brought about, as a sort of side issue, is characteristic of the ways of politicians.

The medical school of St. Mary's Hospital has sustained a serious loss in the decease of Dr. C. R. Alder Wright, F.R.S., the distinguished lecturer on chemistry. His many researches are familiar to all who have paid any attention to the progress of chemistry. His share in the discovery of apomorphine, and his work on the alkaloids of aconite, are the most important from a medical point of view, but they are only a small part of his scientific investigations. He lectured at St. Mary's for nearly a quarter of a century, and his many pupils will regret his

death. He took the Doctorship in Science at the London University soon after that degree was instituted, and has contributed to the repute in which it is held.

London, August 23, 1894.

At the Oxford meeting of the British Association for the Advancement of Science a pleasant event was the unveiling of the statue of Sydenham by the President of the Association and Chancellor of the University, Lord Salisbury. On behalf of All Souls' College, Sir Henry Arland begged the acceptance of the statue by the University, and the Chancellor in accepting it made graceful allusion to Sir H. Arland's work, and to the growth and renewal of the study of nature, of which the museum where they were assembled was the outcome. It is curious that Sydenham, who was a Fellow of All Souls', did not take his degree at Oxford, but at Cambridge, and it has been conjectured that this was due to his Roundhead proclivities or connections, but we really have hardly any reliable information about him until he had established his position as the leading physician of his day. It is sometimes said that he was never admitted as Fellow of the London College of Physicians on account of political feelings, but there is no proof of this. The college was very likely as much a clique as it is in our own day, and Sydenham, like some of our contemporaries, might object to show subserviency to the governing clique.

Of course, the sensation of the Oxford meeting was the announcement that a new elementary body had been isolated in the atmosphere. You will have heard of all this from other sources, so that I shall only say a word. This new element—if indeed it be one—is even more remarkable than nitrogen for its indifferent qualities. Perhaps it may be after all another form of nitrogen, but on this chemists have not had time to come to an agreement. But the discovery, or even the looking for an unrecognized element in the atmosphere, is full of suggestion for the future, to say nothing of the reproof it offers for neglecting to do so in the past.

The International Ophthalmic Congress, the eighth of the series, has been celebrated at Edinburgh under the presidency of Dr. Argyll Robertson, who referred in his address to the circumstance that the first department of medicine to institute such a congress was ophthalmology. That was thirty-seven years ago. The deaths of Donders and Becker since the last Congress (which was held at Heidelberg in 1888) were touched upon with due reverence, and the illness of Helmholtz was spoken of with sympathy. There were some one hundred and fifty members present at this Congress, and I hear that some valuable papers were brought forward.

Dr. Rentoul is continuing his campaign on the midwives' question. He has just issued a pamphlet entitled, "The Proposed Formation of an Inferior Order of Midwifery Practitioners: A Reply to Dr. William Carter's pamphlet." This reply is one that will give much satisfaction to a large number of medical men. The few who are so anxious to recognize midwives and register them are very fond of putting forward the plea of suffering parturient women, as if their opponents were not equally humane. The truth is, there are too many doctors in most localities, and it is no wonder they do not relish the proposal to register midwives. Consulting accoucheurs have little experience of the requirements of the people.

Scandals connected with the Poor Law seem to multiply, or perhaps it is that they are being made more public. Some of these I have already reported and others are cropping up. The *British Medical Journal* has been busy in the matter lately, the editor following up the investigations set on foot so many years ago by the *Lancet*, and claiming credit for work undertaken and paid for by the proprietors of the *Lancet*. The infirmaries are some of them well managed, but it must be admitted that the nursing is in a great many inferior—and in some it may almost be said there is no nursing at all.

The Chelsea Hospital for Women has taken the next step in its reorganization by electing its honorary staff. This has been reduced in number and a couple of outsiders have been introduced. The others have been chosen from the former staff, which, as you will remember, had resigned. We shall hear more of the matter yet. Already some statements have appeared on behalf of the staff which go far in support of the view I have expressed.

The cases of cholera in a vessel arriving in the Thames have been reported as real Asiatic cholera, the comma bacilli having been found. Another suspicious death occurred in Battersea and was submitted to Dr. Klein, but in this case he was unable to confirm the suspicion from bacteriological examination. Every precaution is being taken to guard the port of London, and cases of diarrhœa on board vessels arriving are ordered to be notified.

Small-pox continues to hold its ground, though with considerable variations from week to week. In the last return there were only 22 cases. There were 10 deaths registered, of which 7 were in the parish of Marylebone, where Dr. Blyth has been most active in preventing the spread of the disease. He is well supported by his sanitary authorities, who seem conscious of their responsibilities, and we have little doubt that all necessary measures will be taken. The outbreak has given a much needed impetus to vaccination, in spite of the follies of the antis. A strictly localized outbreak produces infinitely more alarm than a more wide-spread epidemic, and thus inoculates a larger number of people with fear, and there is a rush to the vaccination stations.

Dr. Wiglesworth's wound was more serious than at first reported. The carotid artery was wounded and had to be tied. He walked through a corridor for some distance to his house, applying pressure himself until assistance was obtained. It is satisfactory to learn that he is going on well.

MEDICAL COLLEGES AND THE MEDICAL PROFESSION.

To the Editor of the Medical Record.

Sir: Perhaps many interested readers with far abler pens than mine will feel in perfect accord with the quoted remarks of Dr. Cochran, as found in the Medical Record of July 28th, editorially referring to the marked increase in the number of medical colleges in the United States.

Statistics yearly show a great army enlisted in the study of medicine, and comparatively large classes of graduate students. It is amazing to think of the number of these so-called medical colleges. It is also a matter of wonder and more than apparent concern to regular practitioners where the army of annual recruits are to go. Here in Ohio, with a dozen times as many colleges as are needed, and with a large migration of young doctors from other States, we now startle the population of our great State with the fact that every three hundred and fifty people have their physician. This, of course, is only approximate, for there never can be an even distribution, and, if there could, every physician well knows that it requires an allotment of eight hundred to one thousand persons to even earn a livelihood in the practice of medicine.

Dr. Cochran suggests the only real remedy. Let every State follow the example of Alabama and limit the number of colleges chartered. Let the requirements in the few allowed be in accord with the professional spirit of the age.

There is no excuse for even this great State having more than two medical colleges. The writer can name medical colleges in this State where clinical work in any department is entirely unknown. Yet the degree that ought to signify so much is belittled. Perhaps Pennsylvania has fewer medical schools compared with her great importance and population than many of the other States.

But who can honestly claim that old Pennsylvania really needs more than two or three high-grade medical schools? So we might go over the list of States with the same result.

It seems far more just that each State should have certain colleges of high standard which would put every State and the whole medical fraternity on equal footing, than that young men graduating recently should be subjected to a senseless so-called examination by one of the several State boards for the ostensible purpose of experimentation. So far as its protective features go for the people at large, it is simply a sham. The author can name three examiners on one of the most prominent State boards who never attended but two five-month terms of lectures in their lives. Every physician in practice knows how soon he forgets many of the even important details of a subject, and how soon he gets notions peculiar perhaps only to himself. Is it just to expect such men to be able to give a student graduating from a well conducted school an impartial and strictly righteous test? We believe it to be neither fair for examiner nor for the student. The whole idea of State board examination is a sham, and will surely be exploded ere many years, as it most heartily deserves to be.

One good general law providing for the regulation of the number of medical colleges, the establishment of a certain adequate standard, the abolition of quackery, and one fair but very thorough collegiate test by a combined board of faculty of college and corresponding State authorities would do more good, give better satisfaction to the profession, afford at least more than a show of real protection to the people, and be vastly fairer to those young men and women who filled the requirements. In addition, no good reason can be given why one such test should not be accepted as satisfactory, wherever the person interested might wish to locate and practise.

W. C. McGEE, M.D.

Little Sandusky, O.

CLIMATE AS AFFECTING THE PRINCIPLES OF APPLIED THERAPEUTICS.

To the Editor of the Medical Record.

SIR: Too much attention is given by the teacher of therapeutics, in the average medical school, to exact dosage, minimum and maximum doses, and the specific action of drugs, and not enough to the circumstances which may attend any case to which a physician may be called.

The beginning practitioner is all at sea. He has been taught that he can accomplish certain or positive results by the use of such therapeutic agents as have come into use in the progress of medicine. Accordingly, he gives a dose and then watches for it to act characteristically and immediately, as he would watch the dial of a steam gauge when a fire is built in the furnace of a steam boiler. Not getting the expected result, he mumbles "idiosyncrasy" to himself and tries another drug. He hops from one to another and is tortured by anxiety, fear of failure, dread of public condemnation, etc. If he is so fortunate as to meet with cases which would not require any prompt and decided measures until he can begin to shape his senses and learn the practical use of drugs, he will gradually learn that which ought by some means to have been taught him in college, but which seldom or never is taught.

How few authors or teachers of medicine ever consider the matter of how climate may influence the action of drugs, or of what particular drugs may be modified in their action by differences in climate. The text or teacher says that a certain drug produces such an effect if given in such a dose, at such a time of the day. Its action is modified by the diet of the patient, perhaps by the disease from which he is suffering, and by some other drugs which should, or should not, as the case may be, be administered along with the drug under consideration. Then follows a list of the uses of the drug, but seldom a list of the abuses of the same, which would be of vastly more importance to the student and patients.

Drugs, which in New England, the Middle, and upper Mississippi Valley States produce a characteristic action, may utterly fail to characterize themselves in the South or on the Pacific coast. Cathartics which, in the States east of the Rocky Mountains and above Mason and Dixon's line, produce their effect when given in such doses as are prescribed by the faculty in those regions, produce small or no effect on the Pacific coast. Narcotics are less effectual here and more depressing in their subsequent effects. The much lauded and most excellent system of milk diet is limited to a minority of the class of cases to which it would be applicable in other portions of our country. Many small children will not take milk when well, and cannot take it, no matter what the process of preparing it may be, when they are sick. While the climate here is such that butter seldom gets rancid or unpalatably soft, even when subjected to the ordinary temperature of the air, yet milk from healthy cows, and handled and kept in the most cleanly manner, will ferment and curdle in less than twelve hours, unless scalded or boiled. People who were fond of milk as an article of diet on the other side of the Rockies come to dislike it here. Very few native-born Californians ever touch milk after once becoming accustomed to a general diet. Very few can take milk when sick. It is a most exasperating affair at times to find a suitable diet for the sick. As a rule, meat broths, free from fat and reasonably condensed, administered in quantity of from three to five ounces to an adult every two or three hours, is our mainstay in the class of cases which we are told to keep on milk in the East. The milk will curdle in tough masses and be vomited, or set up a diarrhœa due to fermentation and sadly aggravate the case.

Lobar pneumonia and capillary bronchitis are more frequent than other forms of acute pulmonary disease. Pneumonia rarely gives as high a temperature here, or as characteristic symptoms as in countries having rigorous winters, and rarely terminates by crisis, but by lysis.

It is harder to decide upon the proper time to administer stimulants, and a greater quantity will be tolerated than in the eastern portion of the United States.

All diseases are apt to follow a slower course than in the East, and convalescence is much slower and less sure.

In regard to the much lauded climates of the Southwest, to which many patients are shipped who are suffering from pulmonary troubles, I feel sure that few physicians would continue to send patients there if they could see the country. The mental, moral, and physical conditions are all depressing to any new-comer, unless he be philosophical enough to make the best of the poverty of nature. The alkali dust, barren plains, hot days, and cold nights, with ragged Indians, dirty, ragged, nomadic, mixed inhabitants, poor food, poor accommodations, absence from home and friends, strange climate, and fatigue of a long journey, make a combination of most unsuitable circumstances for an invalid. The tourist on a pleasure excursion sees only the best, hears the best, tastes the best, and believes the best. More can be done for pulmonary cases, especially when the disease is well advanced, by keeping them in a pleasant, well-ventilated room, kept at a constant temperature throughout the twenty-four hours, and the best hygienic measures carried out, together with such remedies as the necessity of the case may require from time to time, than in any or all of the health resorts of the earth. This may not be the popular view of the case, but it is the practical side of it.

E. A. SMITH, M.D.

Santa Clara, Cal., August 13, 1894.

The Value of a Doctor's Health.—Dr. W. S. Lumpkin, of Atlanta, Ga., sued that city for $10,000 damages, alleging that the injurious fumes from an open sewer had ruined his health. The jury found in his favor to the amount of $400.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 1, 1894.

	Cases.	Deaths.
Tuberculosis	62	108
Typhoid fever	33	14
Scarlet fever	17	3
Cerebro-spinal meningitis	0	4
Measles	14	2
Diphtheria	112	33
Small-pox	13	2

Quackery is rampant in Paris, though, perhaps, they have not as many faith healers and itinerant impostors as we have in America; yet there is a larger proportion of regularly educated physicians who, weary of the restraints imposed by the regular profession, boldly announce their wares through every sort of advertising medium. And why should they not, when the venerable scientist, Brown-Séquard, is the greatest sinner of them all? Everywhere, on lamp-posts, in urinals, in railway stations, and in the most out-of the-way places along railroad lines, in every direction, one will see large banner posters advertising the "*Suc de Brown Séquard; très précieux*," etc., for nervousness, diminished sexual power in men or women, old or young.—Paris Correspondent of *Medical and Surgical Reporter*.

Dr. L. C. Lane is the leader of the Cooper school faction of the profession in San Francisco. He has recently donated a handsome hospital to Cooper Medical College, which college already occupies a handsome building for college purposes, donated by Dr. Lane. A marble tablet in the auditorium of the college informs the reader that the building was erected out of funds earned by Dr. Lane in his profession. As the site and buildings must have cost on toward a half-million of dollars, Dr. Lane has likely made more money out of his professional work than any other medical man who has ever lived.—*Medical Sentinel*.

Portland's Hospitals.—While we have much to felicitate ourselves upon regarding the character of the work of our Portland hospitals, says the *Medical Sentinel*, yet a visit to a city of any considerable size, or to a city the size of Portland, will convince anyone that in numbers, at least, Portland falls far behind in this matter. Take San Francisco, for instance. A half-dozen hospitals there are equal, for San Francisco, to what the hospitals here are for Portland. Their larger capacity will compensate for the difference in the size of the two cities. But beyond these there are about twenty five other hospitals in San Francisco. It is quite likely that a number have to struggle vigorously to subsist, but the fact that they do subsist year after year, is evidence that there is a place for them. A city has to reach a certain size before hospitals devoted to special lines, or managed for special nationalities or civic divisions of mankind will flourish. Portland is fast approaching such period. It may have reached it.

Sterilization of Catgut by Heat —Professor M. Schüller, of Berlin, says (*Aerztl. Praktiker*, No 30, 1894) that the question of sterilization of catgut is of importance not only to the surgeon and gynecologist, but to every general practitioner. The physician should not content himself with the material offered by druggists and dealers in surgical supplies, but he should be able to sterilize it himself. The methods thus far employed to sterilize catgut are tedious, and for the most part unreliable. The author first tried dry heat, but gave this up as being too tedious. He then experimented with hot fluid, of different kinds. None proved as satisfactory as oleum lavandulæ, an ethereal oil free from oxygen and of very agreeable odor. Catgut loosely rolled up in rings is placed in a wide-mouthed bottle containing lavender oil. The bottle is to be filled up to the stopper, which latter is to touch the surface of the oil. Care is to be taken that all the catgut in the bottle is well covered, because parts which have been above the surface of the oil during the process of sterilization will become brittle. The bottle, hermetically closed, is placed in the steam sterilizer and there subjected for a half-hour to a temperature of from 106 to 110° C. The catgut having been sterilized in this manner is supple and does not tear under ordinary force. The catgut is removed from the bottle by means of sterilized forceps for immediate use, or to be placed in sterilized water or in carbolic acid solution until needed for use. The lavender oil possesses the special advantage over many other fluids, especially oils, in that the same oil can be used repeatedly.

Prize Essay of the Colorado State Medical Society.—The conditions for the $100 Prize Essay voted by the Colorado State Medical Society (June 21, 1894) on the following subject: "The Diagnoses of Tuberculosis by Microscopic Examination of the Blood." Preference to be given to new evidence and the detection of the pretubercular stage. All stages, however, to be included and microscopically differentiated. Paper to be condensed to read in thirty minutes time; to be typewritten and the authorship kept secret till the award of the examining committee is made known. Prize open to anyone; essay to be written in the English language in comprehensive style and as free from purely technical expressions as possible; accuracy of definition and clearness of diction considered. The committee to reserve the award for an essay they deem sufficiently meritorious, *i.e.*, the rules to be observed enabling a diagnosis to be made from the blood alone without the patient being seen. A prize committee of three was appointed, Drs. Charles Denison, H. A. Lemen, both of Denver, and Dr. S. E. Solly, of Colorado Springs. (Dr. L. A. Fisk, of Denver, alternate), and all essays to be handed in under seal by April 1, 1895.

The following test is suggested as not unreasonable: Seven persons being in one room, representing, respectively, a person in health, a case of anæmia, one of leucocythemia, one pretubercular, and three representing the three stages of consumption *i.e.*, 1st, infiltration, 2d, softening, and 3d, excavation (advanced and extensive). In another room the microscopic examination of the blood of several of those, to determine from whom the specimens were taken. It is expected that the ordinary use of the $\frac{1}{6}$, $\frac{1}{10}$, $\frac{1}{12}$, or $\frac{1}{16}$ immersion lenses will answer. If not and there is any doubt, full explanations as to instruments or lenses used should be furnished.

The Association of American Medical Colleges.—Resolutions adopted at a meeting held in San Francisco, Cal., June 7, 1894.

Resolved, That colleges, members of this Association, shall require of all matriculates an examination as follows: 1. An English composition in the handwriting of the applicant of not less than two hundred words; said composition to include construction, punctuation, and spelling. 2. Arithmetic, fundamental rules, common and decimal fractions, and ratio and proportion. 3. Algebra—through quadratics. 4. Physics—elementary —gage. 5. Latin—An amount equal to one year's study, as indicated in Harkness Latin reader. (The above resolution does not apply to students exempt from the entrance examination, as per Sec. 2, Art. III.)

Resolved, That the following classes of students be recognized as entitled to apply for advanced standing in colleges members of this body: *a*. Such graduates of recognized colleges and universities as have completed the prescribed courses in chemistry and biology therein. *b*. Graduates and matriculates of colleges of homœopathy. *c*. Graduates and matriculates of colleges of eclectic medicine. *d*. Graduates and matriculates of colleges of

dentistry requiring two or more courses of lectures before conferring the degree of D.D.S. *e.* Graduates and matriculates of colleges of pharmacy. *f.* Graduates and matriculates of colleges of veterinary medicine. It is provided, however, that the above class of students be required to comply with the provisions of the entrance examination, and to prove their fitness to advanced standing by an individual examination upon each branch below the class he or she may desire to enter.

Resolved, That students graduating in 1899 or subsequent classes, be required to pursue the study of medicine four years, and to have attended four annual courses of lectures of not less than six months' duration each.

The Medical Profession in Texas is not a Unit, if we may be allowed to form a conclusion from a perusal of the pages of the *Texas Health Journal*. In the issue for July Dr. Cunningham has an article with the vigorous title: "The Amazing Infatuation of the Texas State Medical Association in Pompously Parading its Appalling Ignorance of the First Principles of Sanitary Legislation; and its Unbounded Cheek, and Unmitigated Gall in Presuming to Instruct Congress in the Proper Performformance of its Duties—Succinctly Set Forth."

The Physicians of Louisville are obliged to pay a license fee of $10 a year to the city.

Penetrating Wound of the Abdomen.—Dr. Dumitru Popescu reports in *Spitalul*, No. 12, 1894, the case of a peasant sixty-five years old who fell from a hay-rick, impaling himself upon a pitch-fork, one prong of which passed through the abdomen. He remained suspended for a time, until the weight of his body broke the prong and he fell to the ground. After himself pulling out the penetrating body he went home, and five days later applied for relief at the hospital. The abdominal wound was suppurating and there were symptoms of intestinal strangulation. Laparotomy being performed, there were found to be some adhesions and a hernia of the epiploon through the rectus muscle. The strangulation was relieved, and the inflamed epiploon severed, and the peritoneal cavity thoroughly irrigated with sterilized water. The man made a good recovery. The fork had entered in the left hypochondrium, and passing through the abdomen, had again penetrated the peritoneum and torn the rectus muscle, but had been then arrested by the elasticity of the skin.

The Michigan "Jag Cure Act."—The Legislature of Michigan recently enacted a curious statute known as the "Jag Cure Act." It allows a justice, upon the conviction of a disorderly person, instead of requiring a recognizance for good behavior, to accept recognizance conditioned that the defendant will take the cure for the liquor habit in conformity with the rules and regulations of some corporation administering the cure. The supreme court of Michigan has held the act unconstitutional, on the ground that it remits the nature and extent of the punishment to the determination of the fluctuating rules of a private corporation, and transfers, in a measure, the pardoning power of the governor to that body.—*Scientific American.*

Treatment of Gonorrhœa at the Necker Hospital.—At the Necker is the most complete arrangement for the study of gonorrhœa to be found in Europe. The clinic is under the charge of Professor Guyon, while the outpatients' department is conducted by Dr. Ganet.

Each case is thoroughly examined physically and the discharges microscopically before treatment is given, careful histories taken, and all changes in treatment recorded. As the daily clinic is large, the statistics from such a place should be exceeding valuable and reliable.

The irrigators proposed by Professor Guyon are in constant use, both in acute and chronic gonorrhœa and in cystitis. The liquid is placed one and one-half yard (or metre) above the bed or table upon which the patient lies, and the force thus obtained is sufficient to convey the liquid into the bladder, a small glass tip at the end of the rubber tube being held firmly in the meatus. In this manner he uses the potassium permanganate treatment. From one to two litres of a watery solution of potassium permanganate, in varying strengths, from 1 to 4,000 to 1 to 1,000, depending upon the stage of the disease, are passed into the bladder once or twice daily, the patient raising himself to a sitting posture and emptying his bladder from time to time. In this way the bladder may be thoroughly irrigated without the passage of a catheter, which, in cases of stricture, will often be of considerable advantage. In the same way solutions of silver nitrate (1 to 1,000), and of sublimate (1 to 5,000), are used in cystitis. Professor Guyon also uses stronger solutions of silver nitrate (one per cent. to five per cent.) and of cupric sulphate (two per cent. to seven per cent.) in obstinate cases of gonorrhœa.—*Paris Correspondent Therapeutic Gazette.*

Cauterizing Ovaries instead of Removal of them.—Dr. Pozzi, at Hôpital Broca, has now practised cauterization of painful ovaries for over two years, and considers the plan very successful. In one case, in which he

[illegible] then sews the end with silk. If there are some small cysts, he opens them by touching with the Paquelin point. The ovary being returned to the abdomen, he examines and treats the other in a similar manner. Often as many as six small cysts are opened in this way in each ovary.—*Paris Correspondent Therapeutic Gazette.*

Old Age and the Death-rate.—Only 906 persons in a million die from senility, while 1,200 succumb to gout, 18,400 to measles, 27,000 to apoplexy, 7,000 to erysipelas, 7,500 to consumption, 48,000 to scarlet fever, 25,000 to whooping-cough, 30,000 to typhoid and typhus, and 7,000 to rheumatism. The averages vary according to locality, but these are deemed pretty accurate as regards the population of the globe as a whole.—*Medical Age.*

Lady Mary Wortley Montagu on Inoculation.—In an article in the *Popular Science Monthly* for July, 1894, Mrs. Plunkett quotes the following account of small-pox inoculation from Lady Mary Montagu's letters: "Apropos of distempers, I am going to tell you of a thing that I am sure will make you wish yourself here. The small-pox, so general and so fatal among us, is entirely harmless here by the invention of *ingrafting*, which is the term they give it here. There is a set of old women who make it their business to perform the operation in the month of September, when the great heat is abated. People send to one another to know if any of their family has a mind to have the small pox. They make parties for the purpose, and when they are met—commonly fifteen or sixteen together—the old woman comes with a nutshell full of the matter of the *best sort of small-pox*, and asks what vein you will please to have opened. She immediately rips open the one that you offer to her with a large needle, which gives you no more pain than a common scratch, and puts into the vein as much venom as can lie upon the head of her needle, and after binds up the little wound with a hollow bit of shell, and in this manner opens four or five veins. The Grecians have commonly the superstition of opening one in the middle of the forehead and in each arm and on the breast, to make the sign of the cross; but this has a very ill effect, all the wounds leaving little scars, and is not done by those that are not superstitious, who choose to have them in the legs or in that part of the arm that is concealed. The children or young patients play together all the rest of the day, and are in perfect health till the eighth; then the fever begins to seize them, and they keep their beds two days, very

seldom three. *They have very rarely above twenty or thirty in their faces, which never mark;* and in eight days' time are as well as before their illness. Where they are wounded there remain running sores during their distemper, which I doubt not is a great relief of it. Every year thousands undergo this operation, and the French ambassador says that they take the small-pox here by way of diversion, as they take the waters in other countries."

Restriction on the Sale of Patent Medicines.—A bill has been introduced in the Iowa Legislature providing that every patent medicine offered for sale in that State shall have a printed statement on the wrapper giving the ingredients of the preparation. The penalty for disobedience to this law is a fine, not exceeding $100, or imprisonment for six months in the penitentiary.

Strophanthus is recommended by Dr. Skworzow in the treatment of inebriety. In the few cases in which he has tried it, it was given in seven-drop doses of the tincture. It gave rise to vomiting and profuse diaphoresis and quickly excited a distaste for alcohol which was said to persist after the withdrawal of the drug.

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Books as Carriers of Infection.—Dr. McNicoll, an English health officer, states in a recent report that a book was kept under the pillow of a small-pox patient until his death. It was then taken in charge by his son, who lived in another part of the town, and after being kept without disinfection for four weeks in his house, was offered for sale to an artisan, who kept it overnight. While there the artisan's wife perused the book, with the result that, fourteen days later, she developed the rash of small-pox.

BOOKS RECEIVED.

MANUAL OF PRACTICAL ANATOMY: UPPER LIMB, LOWER LIMB, ABDOMEN. By D. J. Cunningham. Vol. I. 669 pages, 8vo, illustrated. Published by Young J. Pentland, Edinburgh & London. Imported by J. B. Lippincott Company, Pa. Price, $7.00.

MANUAL OF PRACTICAL ANATOMY: THORAX, HEAD, AND NECK. By D. J. Cunningham, M.D. Vol. II. 8vo, 647 pages, illustrated. Published by Young J. Pentland, Edinburgh and London. Imported by J. B. Lippincott Company, Philadelphia, Pa.

CLINICAL MEDICINE: A MANUAL FOR THE USE OF STUDENTS AND JUNIOR PRACTITIONERS. By Dr. Judson S. Bury, London. 8vo, 468 pages, illustrated. Published by J. B. Lippincott Company, Philadelphia, Pa. Price, $6.50.

DISEASES OF THE NOSE AND THROAT. By F. De Havilland Hall, M.D. 8vo, 524 pages, illustrated. Published by P. Blakiston, Son & Co., Philadelphia, Pa. Price, $3.00.

HUMAN PHYSIOLOGY. By John Thornton, M.A. 8vo, 436 pages, illustrated Published by Longmans, Greene & Co., New York. Price, $1.50.

TRANSACTIONS OF THE FIFTEENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION, HELD IN THE CITY OF NEW YORK, MAY 22, 23, AND 24, 1893. 8vo, 165 pages, illustrated. Published by D. Appleton & Co., New York.

THE DISEASES OF THE WILL. By Th. Ribot. 8vo, 134 pages. Published by the Open Court Publishing Co., Chicago, Ill. Price, 75c.

SMALL HOSPITALS. ESTABLISHMENT AND MAINTENANCE. By Dr. A. Worcester. AND SUGGESTIONS FOR HOSPITAL ARCHITECTURE, WITH PLANS FOR A SMALL HOSPITAL. By William Atkinson, Architect, 8vo, 114 pages, illustrated. Published by John Wiley & Sons, New York. Price, $1.25.

AN ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES, INCLUDING PRONUNCIATION, ACCENTUATION, DERIVATION, AND DEFINITION OF THE TERMS USED IN MEDICINE, SURGERY, ANATOMY, ETC. By George M. Gould, M.D. Royal octavo, 1,633 pages, illustrated. Publishers, P. Blakiston, Son & Co., Philadelphia, Pa. Price, Full Sheep, net, $10.00; Half Morocco, net, $10.00; Half Russia, with Thumb Index, net, $12.00.

MEDICAL CHEMISTRY. By Elias H. Bartley, M.D. Third Edition. 8vo, 684 pages, illustrated. Published by P. Blakiston, Son & Co. Price, $3.00.

TEXT BOOK OF ABDOMINAL SURGERY. A CLINICAL MANUAL FOR PRACTITIONERS AND STUDENTS. By Skene Keith, F.R.C.S. Edin., assisted by George E. Keith, M.B., C.M. 8vo, 508 pages, illustrated. Published by J. B. Lippincott Company, Philadelphia, Pa.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, UNITED STATES ARMY. Vol. XV. Royal octavo, 842 pages. Washington, D.C.

RETROSPECT OF SURGERY. By Francis J. Shepherd, M.D. 8vo, 259 pages. E. M. Renouf, Montreal, Can.

ESSENTIALS OF ANATOMY. By Charles B. Nancrede, M.D. 8vo, 388 pages. Illustrated. W. B. Saunders, Philadelphia, Pa. Price, $1.00.

ESSENTIALS OF NERVOUS DISEASES AND INSANITY. By John C. Shaw. 8vo, 194 pages. Illustrated. W. B. Saunders.

PRACTICAL LECTURES IN DERMATOLOGY. By Condict W. Cutler, M.D. 8vo, 233 pages. G. P. Putnam's Sons, New York. Price, $2.00.

URIC ACID IN CAUSATION OF DISEASE. By Alexander Haig. Illustrated. 8vo, 400 pages. Second edition. J. & A. Churchill. Price, 10s. 6d.

THE CARE AND FEEDING OF CHILDREN. By L. Emmett Holt, M.D. 8vo, 66 pages. D. Appleton & Co. Price, 50 cents.

A MANUAL OF INSTRUCTIONS IN THE PRINCIPLES OF PROMPT AID TO THE INJURED, INCLUDING A CHAPTER ON HYGIENE AND THE DRILL REGULATIONS FOR THE HOSPITAL CORPS, U. S. A. By Alvah H. Doty, M.D. 8vo, 304 pages. Illustrated. Second Edition. D. Appleton & Co.

A CLINICAL MANUAL. By Dr. Andrew MacFarlane. 8vo, 139 pages. Illustrated. G. P. Putnam's Sons, New York City. Price, $1.25.

DISEASES OF THE SKIN. By Malcolm Morris. 8vo. 555 pages. Illustrated. Lee Bros. & Co., Philadelphia.

BEE LINE REPERTORY. By Stacy Jones, M.D. 16mo, 210 pages. Boericke & Tafel, Philadelphia, Pa. Price, $1.03.

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ESSENTIALS OF DISEASES, EYE, NOSE, AND THROAT. By Edward Jackson, M.D., and E. B. Gleason, M.D. 12mo, 290 pages. Illustrated. Published by W. B. Saunders, Philadelphia, Pa. Price, $1.00.

TRANSACTIONS OF THE INDIANA STATE MEDICAL SOCIETY, 1893. 8vo, 378 pages. Indianapolis, Ind.

ATLAS DE LARYNGOLOGIE ET DE RHINOLOGIE. By A. Gouguenheim, and J. Glover. Quarto, illustrated, Published by G. Masson, editeur, 120 Saint Germain, Paris, France. 1 Vol. Price, 50 fr.

PRECIS DE CLINIQUÉ THÉRAPEUTIQUE. By le Dr. A. F. Plicque. 8vo, 592 pages. G. Steinheil, Paris, France. Price, 7 francs.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Vol. IX., 1894. Held at Washington.

BEARD'S NERVOUS EXHAUSTION (NEURASTHENIA). Third and enlarged edition. By George M. Beard, M.D. Edited, with Notes and Additions, by A. D. Rockwell, M.D. 8vo, 292 pages. E. B. Treat, New York City.

HAND-BOOK OF OBSTETRIC NURSING. By Francis W. N. Haultain, M.D., and James Haig Ferguson, M.D. Small octavo, 243 pages. Illustrated. J. B. Lippincott Co. Price, $1.00.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA. Session of 1894. San Francisco, Cal.

A TREATISE ON APPENDICITIS. By George R. Fowler, M.D. 8vo, 190 pages. Illustrated. Published by J. B. Lippincott Co., Philadelphia. Price, $2.00.

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A SYSTEM OF GENITO URINARY DISEASES, SYPHILOLOGY, AND DERMATOLOGY. By various authors. Edited by Prince A. Morrow, A.M., M.D. 8vo, 976 pages. Illustrated. Published by D. Appleton & Co., New York City.

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REPORT TO THE NEW YORK CITY HEALTH DEPARTMENT ON THE USE OF BACTERIOLOGICAL EXAMINATIONS FOR THE DIAGNOSIS OF DIPHTHERIA.

By HERMANN M. BIGGS, M.D.,

NEW YORK.

PATHOLOGIST AND DIRECTOR OF THE BACTERIOLCGICAL LABORATORY.

EARLY in January, 1893, a communication was addressed to the Health Board of New York City recommending the systematic employment by the Health Department of bacteriological examinations for the diagnosis of diphtheria. This recommendation was made in view of the following considerations there detailed:

"1. The practical differentiation of diphtheria from other diseases affecting the upper air-passages is of great sanitary importance.

"2. It is admitted by all clinicians of experience in this disease that it is often impossible, either from the clinical history or the anatomical lesions, or both, to make an accurate diagnosis of diphtheria. There are no constant differences which separate the simple non-contagious forms of inflammation from the diphtheritic and communicable types, and it is only in a rather small proportion of cases that an early and reliable diagnosis can be arrived at from any data obtainable. The records of the Health Department of New York City have shown this in a very striking way. In the cases of suspected diphtheria under treatment at the Willard Parker Hospital, in which the diagnoses were made by the Department inspectors and confirmed by the Department diagnosticians before the removal of the patients to the hospital, subsequent bacteriological examinations showed that from thirty to fifty per cent. of these cases were not diphtheria, but were cases of pseudo-diphtheria.

"3. All recent bacteriological investigations made to show the value of such examinations for the diagnosis of diphtheria are in accord in stating positively that reliable conclusions may be reached by this method in from twelve to twenty-four hours. These investigations include those made by Baginsky in Berlin, Martin in Paris, and Koplik and Park in New York. The results arrived at in these investigations have been confirmed by the subsequent histories of the cases examined. In those cases in which bacteriological examinations have shown the absence of the Klebs-Loeffler bacillus, the mortality has varied from one to five per cent., and the cause of death has usually been broncho pneumonia, and not the local disease; while in those cases in which bacteriological examinations have shown the presence of the Klebs-Loeffler bacillus, the mortality has varied from twenty to nearly fifty per cent. Further, it has been demonstrated that in the cases in which the Klebs-Loeffler bacillus is not found there is little danger of the transmission of the disease to others; while from the cases of true diphtheria (as shown by bacteriological examinations), even when the disease is of the mildest type, frequent and numerous instances of infection have been recorded.

"4. The employment of bacteriological examinations for the diagnosis of diphtheria would have an important influence on the work required of officials of the Department and the cost of this work. Bacteriological investigations in diphtheria have shown that accurate conclusions can be arrived at as to the nature of the disease in most cases within fourteen hours. Investigations made by Dr. Park, at the Willard Parker Hospital, show the Department has in the past provided for the maintenance and treatment of a large number of patients having pseudo diphtheria. This has been at a large unnecessary annual cost, and the facilities of this Department for the treatment of cases of true diphtheria have been thereby limited. In addition to this, under the regulations of the Department at present, a large number of cases of pseudo-diphtheria must be repeatedly visited by inspectors, and the rooms, clothing, etc., after convalescence, thoroughly disinfected. This is at a further large cost to the Department, and the expenditure of much valuable time. If the Department was prepared to avail itself at once in all cases of means for the bacteriological diagnosis of diphtheria—as this can be arrived at in so short a time—any definite action could, as a rule, be held in abeyance until a conclusion as to the nature of the disease had been reached. In those cases in which the results showed the disease was pseudo diphtheria, the Department would be at once relieved from further action.

"During the year 1891, 4,874 cases of diphtheria were reported to this Board, and so far as can be judged from the data at hand, at least one-third, and perhaps more, of these were not diphtheria.

"5. The resort to bacteriological examinations for the differentiation of true diphtheria from pseudo diphtheria would constitute an important step in advance.

"The Health Department of New York City determined during the cholera outbreak in 1893 to depend solely on bacteriological examination for the diagnosis of Asiatic cholera. No State or Municipal Sanitary Board has as yet officially adopted bacteriological examinations for the diagnosis of diphtheria, but in this city these would be of far greater value in the diagnosis of diphtheria than in the diagnosis of cholera, because of the greater prevalence and constant presence of diphtheria here. The formal recognition of this method by the Board would be received by the profession as an important indication of the determination of the Board to keep the work of the Department thoroughly abreast of the most recent discoveries of scientific medicine.

"6. In addition to the work on the diagnosis of diphtheria, there would naturally arise from such examinations investigations as to the best methods to prevent the extension of this disease."

In the report just quoted, the appointment of Dr. William H. Park as bacteriological diagnostician and inspector of diphtheria, was recommended. Dr. Park's name was suggested because of the special investigations that had been carried on by him during the previous year in the hospitals under the control of the Health Department, and because of his special training and fitness for this position.

After some unavoidable delay, early in May of 1893, Dr. Park was appointed, in accordance with the recommendation, "Bacteriological Diagnostician and Inspector of Diphtheria."

The Health Board at that time determined to make use of bacteriological examinations for the diagnosis of diphtheria, not only in all cases admitted to the hospital wards, but also in all cases of suspected diphtheria occurring in the city where the co operation or consent of the

attending physician could be obtained. This action was determined on with a view to giving precision to the work of the Department in the prevention of this disease.

During the first weeks after the commencement of this work the number of cases examined weekly was comparatively small, but this number has continually increased until, during the last few months, a large proportion of all the cases of suspected diphtheria occurring in the city have been subjected to bacteriological examination.

As the scope and extent of the work increased, it was found it would be impossible for Dr. Park to perform all of the actual bacteriological examinations, and Mr. Alfred L. Beebe, inspector of bacteriology in this Department, was assigned to assist him.

From the beginning those in charge of the work had little doubt of its ultimate success, but they appreciated the importance of the change that was made in the sanitary management of this disease, and did not feel assured that the physicians of this city would quickly avail themselves of the opportunities thus afforded to them.

At first, as far as possible, the inspector of diphtheria, or special inspectors assigned to this duty, visited physicians who reported cases of diphtheria and explained to them the purposes of the work. These inspectors made inoculations from cases only after a request or the specific consent of the attending physician had been received. After a short trial, however, it was evident that a large majority of the physicians of New York would be glad to avail themselves of the assistance offered by the Department. A further step was then taken to increase the facilities for such examinations. A number of depots were established throughout the city (these now number about forty) where culture-tubes and the directions required for making the inoculations could be obtained by physicians without charge. These depots were generally established at drug stores, at convenient points, and arrangements were made for the collection of the tubes left at these depots by Department collectors late in the afternoon of each day. For convenience and safety in transporting the tubes, small wooden boxes, holding culture-tubes, were supplied from each of the depots. Each box contains all that is required for making a culture, *i.e.*, a culture-tube, a swab for inoculating it, and a blank for recording the name, address, etc., of the patient. Each box with its contents is known as "a culture outfit."

The following cards, giving directions for making the cultures and the addresses of the depots where tubes could be obtained, were also supplied with the tubes:

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION, BACTERIOLOGICAL LABORATORY.
WHITE, CENTRE, ELM, AND FRANKLIN STREETS.

DIRECTIONS FOR MAKING CULTURES IN CASES OF SUSPECTED DIPHTHERIA.

The patient should be placed in a good light, and, if a child, properly held. In cases where it is possible to get a good view of the throat, depress the tongue and rub the cotton swab gently, but freely, against any visible exudate.

In other cases, including those in which the exudate is confined to the larynx, avoiding the tongue, pass the swab far back, and rub it freely against the mucous membrane of the pharynx and tonsils. Without laying the swab down, withdraw the cotton plug from the culture-tube, insert the swab, and rub that portion of it which has touched the exudate gently but thoroughly back and forth all over the surface of the blood-serum. Do not push the swab into the blood-serum, nor break the surface in any way. Then replace the swab in its own tube, plug both tubes, put them in the box, and return the culture outfit at once to the station from which it was obtained.

A report will be forwarded the following morning by mail, or can be obtained by telephone, after 12 noon.

Culture Outfits can be Obtained from the Following Stations Free of Cost:

EAST SIDE.

712 Tremont Avenue..... Eichwort	67th St. and 3d Ave. .... Hoykendorff
138th St. and 3d Ave.....Fraser	45th St. and 3d Ave.....Goetting
125th St. and Madison Ave.....Marsh	42d St. and Park Ave....Schoonmaker
116th St. and 3d Ave.....Engelhardt	41st St. & Park Av., Van Horn & Ellison
115th St. and 1st Ave .....New	29th St. and 4th Ave.....Bagoe
110th St. and Madison Ave....Barnes	12th St. and 2d Ave..... Proben
105th St. and 3d Ave.... ...Aaronstam	11th St. and Avenue A .....Montesser
86th St. and Park Ave.....Falkenrecht	Spring St. and Bowery..... Moor

WEST SIDE.

135th St. and 7th Ave.. .....Breen	36th St. and 9th Ave... . .... Rupp
125th St. and 8th Ave. . .. .Spear	29th St. and 5th Ave .. ....Frazer
122d St. and 7th Ave.....Heinemann	22d St. and 9th Ave.... . . ... Smith
98th St. and Columbus Ave..Rosenson	157 8th Ave..... .....Lins
93d St. and Columbus Ave..... Dorn	148 8th Ave. . .....Utley
72d St. and Boulevard .....Kerley	121h St. and 6th Ave.... ...Ridgeway
72d St. and Columbus Ave.. Cassabeer	8th St. and 6th Ave.....Bigelow
411 West 50th St.....Dougherty	283 Bleecker St.... ... .McCord
46th St. and 5th Ave...Bartlett & Liell	172 Varick St..... .....Jennsen

FORM OF BLANK WITH EACH "CULTURE OUTFIT."

Return swab and both tubes.

DIPHTHERIA.

Name of Maker of Culture
Date Time
Name of Patient Age
Address
Att. Phys. Address
Duration of Disease
How Contracted
Can Case be Isolated?
Location of Membrane
Was Inoculation Satisfactory?
Clinical Diagnosis

Return swab and both tubes.

The diagnosticians, and later the medical inspectors of the Department, were supplied with leather pocket-cases, containing a number of culture-tubes and swabs, and were given instructions regarding the methods of making the inoculations. These arrangements being completed, the following circular was delivered, by special messengers, at the office of every physician in this city:

HEALTH DEPARTMENT.
No. 301 MOTT STREET, NEW YORK, July, 1893.

CIRCULAR OF INFORMATION CONCERNING THE USE OF BACTERIAL CULTURES FOR THE DIAGNOSIS OF DIPHTHERIA.

Recent bacterial investigations have shown that a considerable proportion of the cases of pseudo-membranous and exudative inflammations of the throat and upper air-passages, commonly considered as diphtheria, and having the anatomical appearances found in diphtheria, are not true diphtheria. These cases may be called pseudo- or false diphtheria.

It has also been shown that a considerable number of cases which are apparently false diphtheria prove on bacterial examination to be true diphtheria. While in true diphtheria the mortality is very high and the danger of transmission to others is great, in false diphtheria the mortality is low and the danger of infection slight. The differential diagnosis between true and false diphtheria can be made by bacteriological examination within twelve hours, while without this the differentiation is difficult or impossible.

The Health Department is now prepared to make use of bacterial cultures for diagnosis in all cases of suspected diphtheria occurring in the city, and desires that in every case either the physicians should themselves make the inoculations, or should authorize an inspector to make them. They should be made in every suspicious case at the earliest possible moment, for during convalescence the specific organisms often disappear from the throat, and the full benefit of a positive diagnosis is not obtained unless it is made early in the disease.

The inoculations are made by gently rubbing a cotton swab against the throat, and then drawing it over the surface of the culture-medium. When the physician desires to himself make the culture (and this is usually the better plan, for it can be done earlier and is more agreeable to the family), he can obtain, free of cost, a culture-tube and swab, and the simple directions necessary for their use, at any one of the druggists whose addresses are given. After the inoculation the tubes are to be returned at once to the druggist from whom they were obtained. The tubes will be collected by the Department every evening.

In cases where an inoculation has not been made by the attending physician, the medical inspector will make one, unless for any reason the physician requests that none be made when he notifies the Department of the case.

The diagnosis will be ready by noon of the following day. The attending physician can obtain this immediately by telephoning to the laboratory, or when this is not done, he will be notified by mail. Cases which prove to be false diphtheria will not be visited by the Health Department inspectors. Cases, on the other hand, which prove to be true diphtheria, will be subjected to the usual rules and regulations covering contagious diseases.

The materials required for making inoculations can be obtained from the druggists named, free of cost.

All communications on this subject should be addressed to Dr. Hermann M. Biggs, Chief Inspector Pathology, Bacteriology, and Disinfection, No. 42 Bleecker Street (Telephone "1191 Spring").

By order of the Board of Health,

CHARLES G. WILSON, *President.*
EMMONS CLARK, *Secretary.*

As soon as it was possible to still further enlarge the work, a new investigation was instituted. This was the determination, by bacteriological examination of secondary cultures from the throats of convalescent cases of diphtheria, how long the bacilli of diphtheria persist during convalescence.

After a sufficient number of examinations had been made to draw accurate conclusions, the following circular was printed, and ordered to be sent to the physician with the report of the result of the bacteriological examination of the first culture. In it, the important announcement is made that, in the future, no case will be considered free of the contagion of diphtheria until this fact has been established by culture test.

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION,
No. 301 MOTT STREET, NEW YORK, 189—.

No. 42 BLEECKER STREET.

To Dr. ——.

SIR: During the last few months a series of investigations have been made in the bacteriological laboratory of the Health Department to determine how long the Loeffler bacilli remain in the throat after the disappearance of all false membrane in cases of diphtheria.

The results obtained are extremely significant, and have caused the Department to establish a new rule regarding the discharge from observation of patients who have suffered from diphtheria, and regarding the time of disinfection of the premises.

During the past three months 405 cases of true diphtheria have been subjected to repeated bacteriological examinations performed at short intervals during the course of the disease and during convalescence.

In all of these cases cultures were made at the beginning of the disease, again after the lapse of three or four days, and finally at short periods after the complete disappearance of the false membrane, until the throat was found to be free from the diphtheria bacillus. In 245 of these 405 cases the diphtheria bacilli disappeared within three days after the complete separation of the false membrane; in 160 cases the diphtheria bacilli persisted for a longer time, namely: in 103 cases for seven days, in 34 cases for twelve days, in 16 cases for fifteen days, in 4 for three weeks, and in 3 for five weeks after the time when the exudation had completely disappeared from the upper air-pa sages. In many of these cases the patients were apparently well many days before the infectious agent had disappeared from the throat. These results show that in a considerable proportion of cases persons who have had diphtheria continue to carry the germs of the disease in their throats for many days after all signs and symptoms of the disease have disappeared. No doubt the disease is largely disseminated by these persons who are apparently well, and who mingle with others while their throat secretions still contain the diphtheria bacilli.

These experiments have led the Health Department to adopt the rule, that no person who has suffered from diphtheria shall be considered free from contagion until it has been shown by bacteriological examination, made after the disappearance of the membrane from the throat, that the throat secretions no longer contain the diphtheria bacilli, and that until such examinations have shown such absence all cases in boarding-houses, hotels, and tenement-houses must remain isolated and under observation. Disinfection of the premises therefore will not be performed by the Department until examination has shown the absence of the organisms.

Secondary cultures, as in the case of primary cultures, may be made by the attending physician, if he so desires; otherwise they will be made by the inspector of the district in which the case occurs. This applies only to cases occurring in boarding-houses, hotels, and tenement-houses—not to those in private houses.

In this connection an interesting observation has been made showing that in diphtheria cases which have been subjected to frequent irrigation with antiseptic solutions from the beginning of the disease the bacilli disappear more rapidly than in those in which such irrigations have not been employed. The Department would feel grateful for any data which the physicians of this city may furnish as to the treatment employed in each case, in order that more reliable conclusions may be reached as to the best mode of treatment.

It has been also found, that occasionally when culture-tubes are inoculated immediately after irrigation of the throat with antiseptic solutions, the cultures do not show any Loeffler bacilli, although subsequent examinations may demonstrate their presence. This observation should be noted in making inoculations.

Very respectfully,
HERMANN M. BIGGS, M.D.,
Chief Inspector of Pathology, Bacteriology, and Disinfection.

Approved by the Board of Health.

CHARLES G. WILSON, *President.*
EMMONS CLARK, *Secretary.*

Blank to be filled out and returned with secondary cultures.

Return swab and both tubes.

DIPHTHERIA—Later Cultures.

* Number of Culture, 2d, 3d, 4th, 5th, 6th, 7th, 8th.
Date Inspector or Physician
Name of Patient Laboratory Number
Address
Duration of Disease
Is the place ready for disinfection if the culture is found free from diphtheria bacilli?

During the first few months, in order to test the results of the examinations and to make the liability to error as slight as possible, the following plan was adopted:

All cases which yielded no diphtheria bacilli were turned over to special inspectors, who made, if possible, in every case, a second culture, and followed up the patient for some time after recovery. From the information thus secured, the bacteriologists of the Department were able to decide more and more surely how far they could base an absolute diagnosis on the examination of a culture.

In the first circular issued, the Health Board announced that cases which proved on bacteriological examination to be false diphtheria, would not be kept under the observation of the Department. Some physicians who heartily approved of the work of the Department in its treatment of diphtheria, believed that in this step it had proceeded too far, and that the false cases, though less contagious than the true, were yet sufficiently so to render isolation and supervision necessary. From a large experience the Health Board believed these cases were so rarely serious in their results, and were so little, if at all, contagious, that visits from Department inspectors were unnecessary. Nevertheless, before issuing the circular, one hundred and fifty consecutive cases were investigated, all sources of contagion sought for, and the patients kept under observation for two weeks after convalescence. In none of these was isolation or disinfection required. The evidence obtained so completely confirmed the previous experience that the Health Board felt justified in concluding it was unnecessary to exercise any sanitary supervision over cases of false diphtheria. Those who believe they have met with cases of false diphtheria which have been the cause of severe or fatal illness in others, have probably either mistaken the nature of the first case, or have been dealing with some other infectious disease (such as scarlet fever), in which the inflammation of the throat is merely a secondary lesion.

In order to make the possibility of error in the routine work as small as possible, for some months the following circular has been mailed to physicians with every report:

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY AND DISINFECTION,
No. 42 BLEECKER STREET.

NEW YORK, February 20, 1894.

TO PHYSICIANS: It is the earnest desire of the Health Department that the service in the bacteriological diagnosis of diphtheria be made as perfect as possible and as useful to physicians as it can be made. When cultures are left at any of the depots before 4 P.M., it is the aim to return in every case a report of the bacteriological diagnosis on the following day. Reports are mailed before one o'clock, and should be delivered to the physician before the last mail of the day. Earlier reports can be obtained by applying to the Laboratory by telephone (No. 1191 Spring) after 12 M.

When the bacteriological diagnosis does not harmonize with the clinical facts and the history, as shown by antecedent or subsequent cases of diphtheria, and where there are any defects or reasons for complaint regarding the service in any respect, physicians are earnestly requested to report these promptly to the Chief Inspector, Dr. H. M. Biggs, No. 42 Bleecker Street. Knowledge of defects in the service can only reach the Department through such reports, and the service can only thus be improved and perfected.

Physicians are requested to read carefully the accompanying circulars describing the character of the work and method of procedure, and to follow exactly the instructions given. Thus uniformity in method and accuracy in results will be insured.

HERMANN M. BIGGS, M.D.,
Chief Inspector of Pathology, Bacteriology, and Disinfection.

Depending on the results after the examination of primary cultures, one of the following blanks is filled out and mailed to the attending physician before 12 M. of the day following that on which the culture was made:

NEW YORK, 189—

Dr. ——

DEAR SIR: The examination of the cultures made by inoculating the tubes with the exudation from the throat of on shows the presence of the diphtheria bacilli.

The case is therefore one of true diphtheria.

.....
Chief Inspector.

.....
Inspector of Diphtheria.

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION,
BACTERIOLOGICAL LABORATORY, 42 BLEECKER STREET.

NEW YORK, 189—

Dr. ——

DEAR SIR: The examination of the cultures made by inoculating the tubes with the exudation from the throat of on does not show the presence of any diphtheria bacilli.

The case is therefore not true diphtheria,[1] but pseudo- or false diphtheria, and no further cognizance will be taken of it by the Department unless by the special request of the physician in attendance.

.....
Chief Inspector.

.....
Inspector of Diphtheria.

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION.
BACTERIOLOGICAL LABORATORY, 42 BLEECKER STREET.

NEW YORK, 189—

Dr. ——

DEAR SIR: The examination of the cultures made by inoculating the tube with the exudation from the throat of on does not admit of an exact bacteriological diagnosis, for the following reasons:

A. The inoculation was made at so late a period in the disease that it is possible that the diphtheria bacilli, though now absent, were at an earlier time present.

B. The growth on the culture media was so scanty that it is probable that the inoculation was not properly made, or that some antiseptic had been applied to the throat shortly before obtaining the material for inoculating the tube.

C. The culture media was badly contaminated.

D. The serum in the tube was too dry to permit of the growth of the diphtheria bacilli.

a. Another culture is requested.

b. The case will be treated as one of diphtheria.

c. The case will be treated as one of false diphtheria unless the physician in charge of the case requests otherwise.

.....
Chief Inspector.

.....
Inspector of Diphtheria.

After the examination of each secondary culture and depending on the result of the examination, one of the following blanks is filled out and forwarded to the attending physician and to the Chief Inspector of Disinfection:

Laboratory No.

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION.
BACTERIOLOGICAL LABORATORY, No. 42 BLEECKER STREET.

NEW YORK, 189—

Dr. ——

DEAR SIR: The examination of the culture made by inoculating the tube from the throat of on shows the presence of the diphtheria bacilli.

The case is therefore not yet ready for disinfection, but needs a further culture.

HERMANN M. BIGGS, M.D.,
Chief Inspector.

WILLIAM H. PARK, M.D.,
Inspector of Diphtheria.

Laboratory No.

HEALTH DEPARTMENT.
DIVISION OF PATHOLOGY, BACTERIOLOGY, AND DISINFECTION.
BACTERIOLOGICAL LABORATORY, No. 42 BLEECKER STREET.

NEW YORK, 189—

Dr. ——

DEAR SIR: The examination of the culture made by inoculating the tube from the throat of on does not show the presence of any diphtheria bacilli.

The case is therefore ready for disinfection, if the other circumstances allow.

.....
Chief Inspector.

.....
Inspector of Diphtheria.

[1] This conclusion is based on the supposition that the directions have been properly carried out and that the inoculation was made before the commencement of convalescence. After convalescence is established the bacilli often disappear from the exudate.

In the beginning of this work some physicians familiar with bacteriological investigation feared that it was not safe to trust the inoculation of the culture-tubes to physicians unskilled in bacteriological methods. The Department has found, however, that physicians may as a rule be relied on to carefully follow the simple directions as to the procedure required to make satisfactory inoculations of culture-tubes, and that the diagnoses based on the bacteriological examinations of such tubes can be safely accepted.

A communication was forwarded to the Health Board in November, 1893, recommending the adoption of an amendment to the Sanitary Code, which should include so called "membranous croup" with the contagious diseases concerning which the Department requires reports from physicians. This recommendation was based on the results of the bacteriological examinations of a considerable number of cases of croup, which showed that more than eighty per cent. of them were really cases of laryngeal diphtheria.

The detailed results of the work for the first year, both as to the bacteriological examination of suspected cases of diphtheria and the experimental work on questions allied to this, are contained in the appended report from the Bacteriological Laboratory, by Dr. William H. Park, Bacteriological Diagnostician and Inspector of Diphtheria, and Mr. Alfred L. Beebe, Inspector of Bacteriology, by whom this work has been performed.

There is also appended a report from Dr. A. Campbell White, Resident Physician at the Willard Parker Hospital, detailing the results obtained from an important series of investigations made to determine the influence on the persistence of the diphtheria bacilli of systematic irrigation of the throats of diphtheria patients with various antiseptic and cleansing solutions. The results are not as satisfactory as had been hoped for.

The question is naturally and properly asked, as to what influence this work has had on the prevalence of diphtheria in this city? In reply to this it can only be said that there has been a large increase in the number of cases of diphtheria occurring during the last year in many of the large cities of the world, and New York has suffered from this semi-epidemic influence, but to much less extent than some other cities. The number of cases reported weekly had begun to increase before the initiation of this work and this increase has continued notwithstanding it. The total number of cases reported during the last year has been considerably greater than during the previous year, but the number of cases apparently occurring in the city has been unquestionably increased by the more universal reporting of cases by physicians. It is, of course, impossible to say how much greater the real increase of cases would have been without the work which has been carried on by the Department, and the inability of the Department to completely control the spread of the disease will be readily understood by reference to the description of the methods of dissemination of the disease contained in the detailed report from the Bacteriological Laboratory appended herewith.

It may be said in conclusion that the success of this new departure of the Health Department of New York city has far exceeded all anticipation. The Health Board was the first sanitary board in the world to officially adopt and provide for the making of such bacteriological examinations, and the course of the board in this matter has been carefully watched by sanitary authorities in various parts of the world. Constant inquiries have been made as to the conduct of the work, and many requests for circulars and for information as to the manner in which the work is carried on have been received. Numerous

representatives of other health departments have been instructed, in the Bacteriological Laboratory, in the methods employed; and the plan of work, as devised by this Department, has been adopted, without modification, by the health authorities of many other cities.

THE SURGICAL TREATMENT OF SURGICAL KIDNEY.

By ROBERT F. WEIR, M.D.,

PROFESSOR OF SURGERY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK; SURGEON TO THE NEW YORK HOSPITAL, ETC.

SUPPURATIVE pyelo-nephritis, suppurative interstitial nephritis, and surgical kidney are the ordinary names given to a disease which, originating, as a rule, in the bladder, generally affects, according to Delafield,[1] both kidneys. This observer gives the following excellent, though brief description of the pathological changes usually found in this affection.

"The pelves of the kidneys are congested and coated with pus or fibrin. The kidneys themselves are swollen, congested, and studded with foci of pus The smallest foci are not visible to the naked eye, but with the microscope collections of pus cells are found between the tubes, with swelling and degeneration of the epithelium, within the tubes. The larger purulent foci look like white streaks or wedges running parallel to the tubes, and are surrounded by zones of congestion. The larger abscesses replace considerable portions of the kidneys. The ureters are in some cases inflamed, their walls thickened, and their inner surface coated with pus or fibrin. The bladder presents regularly the lesions of acute or chronic cystitis. It is a very fatal disease. So far," continues Delafield, "as I know, all the cases die, and when nephritis is once established there is no further control over thecase."

This may be said to represent very fairly the impression common to the profession from various authoritative sources concerning this very frequent complication of acute or chronic inflammatory and obstructive affections of the bladder. The following case, however, shows that some modification may be made in the foregoing statement concerning the prognosis of such cases.

Henry W. D——, a young man, twenty-five years of age, was admitted to the surgical wards of the New York Hospital on April 2, 1894, with the history that four years previously he had had pneumonia, which was followed a few months later by an attack of scarlet fever, accompanied by nephritis. From this latter complication albumin and casts persisted for a considerable length of time afterward in the urine. He never entirely regained his health, though previous to this time he had been noted as an athlete. About one year ago he had a mild attack of urethritis, which did not extend to the deep urethra. Three months ago he contracted a second and severe urethritis, which invaded the bladder. He suffered from an increased frequency of urination, with tenesmus and a discharge of blood and pus. Gonococci were present in this discharge in great numbers. This trouble subsided gradually under local treatment, which consisted of irrigation, at first daily with a one per cent. solution of creolin, then with a quarter of a grain solution of silver nitrate every third day, supplemented by irrigation twice a day with a quarter of a grain solution of zinc sulphate. During the last month applications had been made to the posterior urethra with a Keyes syringe. Two weeks later urination had so far improved that the bladder was evacuated but once in every four hours. The urine was acid in reaction; specific gravity, 1024; but still contained considerable pus and about ten per cent. of albumin. About twelve days prior to his admission into the hospital, without any assignable cause, the last instrumentation being nearly a week anteriorly, he developed a chill, succeeded by a temperature of 101° F., with prostration, vomiting, and diarrhœa. These symptoms subsided on decubitus, with fluid diet, subnitrate of bismuth, and oxalate of cerium.

[1] Letters on Practical Medicine and Pathology, 1890.

Eleven days ago, that is, the next day to the above attack, pain in the loins was first complained of and was of the character of lumbago. The next day he suffered a relapse of his febrile symptoms, the temperature rose to 103° F., and the pain in the back increased in severity. Tenderness could be readily excited by bimanual examination in the renal region, particularly on the right side. By the rectum the bladder was normal, nor was there any increase in the frequency of urination. Two days later the temperature had fallen to 101° F.; but the lumbar tenderness increased and was more marked in the right loin and hypochondrium. He was then admitted to the New York Hospital on the medical side, where, after a temporary stay, he was transferred to the surgical division.

During the seven days that elapsed between his entrance into the hospital on March 28th, to April 4th, when surgical interference was resorted to, he had four chills, the temperature rose daily, ranging between 103° and 105½° F. When seen by me April 3d, in consultation with Dr. Peabody, the physician then on duty in the medical ward of the hospital (to whom the case had been first referred as one of severe typhoid fever, but by whom this diagnosis was speedily rejected), the patient's condition was a most serious one. The urine was discharged in quantities ranging from fifty to sixty ounces per diem. It was moderately turbid, contained pus, and was voided without much bladder irritation; pulse, 116 to 120. Pain was complained of in the right lumbar region. Pressure in that place alone, or conjoined with pressure in front, gave rise to a decided tenderness. This was not experienced on the left side. Some tenderness was, however, found on both sides, but after repeated trials it was found to be confined to the spinal muscles themselves. For when pressure was brought to bear directly over the region of the kidney external to the erector spinæ muscles, no pain was developed on the left side but considerable on the right side. Moreover, by bimanual examination on the right side, it was thought that an enlargement of the kidney could be made out. My own impression at that time was that the patient had probably an abscess of the kidney, or possibly several such, of considerable size. I did not think that he had the ordinary condition known as the "surgical kidney," because of the single-sided nature of the symptoms and its somewhat slow development. I, however, felt that there was urgency in his case and that an exploratory incision should be made down to the kidney and this organ opened in the hope of evacuating the contained matter. It was considered advisable in the condition of the patient, to fully acquaint his family of the great risk the operation might bring the patient into and the possibility of not affording him any benefit whatever if it should be proven to be a general renal infection. Any hope of relief, however, was grasped at by them, and under ether anæsthesia on April 4th, with the patient in the usual position, an incision was made just outside the quadratus lumborum muscle from the twelfth rib down to the crest of the ilium, and thence forward to and a little above the anterior superior spine of the ilium, the flap raised up and the kidney exposed. It was found to be twice its usual size. It was irregularly and deeply congested, and also irregularly swollen, particularly so on its inferior surface. Puncture in two or three directions with the aspirator needle gave no evidence of pus. An incision was then made along its external border, about its middle, and revealed immediately the nature of the disease. This incision, an inch in length and nearly an inch in depth, disclosed on its two sides numerous miliary abscesses and streaks of hemorrhages and pus which showed that we had to do with an ordinary surgical kidney. The rather desperate venture was, however, taken of advising and practising an extirpation of this infected and infecting kidney, basing this action upon the assumption that no symptoms pointed decidedly toward an invasion of any great extent of the left side.

With the ample room afforded by the incision just described (König's) the kidney was rapidly enucleated, heavy silken ligatures being passed around it, and its pedicle secured. The kidney was separated beyond the ligature, the wound packed lightly with weak iodoform gauze and the lower edge of the wound secured by silkworm gut sutures.

Immediately after the operation the temperature dropped from 105° F. to 99° F. and remained subnormal the three following days, with a moderate amount of vomiting. From the fourth day onward the patient made an uninterrupted and rapid recovery, being discharged from the hospital on April 20th, three weeks later. At that time, his urine, though not absolutely free from pus cells, was nearly normal. However, it contained still, on bacteriological examination, a few but a diminishing number of the rods of the colon bacillus, but no treatment was thought advisable, except that he should spend as much time the present summer in the open air as the ordinary rules of hygiene demanded.

The report of the pathologist of the hospital, Dr. Ferguson, on the removed kidney, is that it measured 14 × 6½ × 4 ctm. and that its capsule was thickened and adherent. Various cut surfaces beside the exploratory incision showed a great number of abscesses of miliary size in the pyramids and also in the cortex. The kidney substance also contained a large number of minute hemorrhages; the pelvis was dilated, its mucous membrane contained many small hemorrhages but was otherwise pale. No gonococci were found on bacteriological examination, but numerous colonies of the bacillus coli communis were developed under culture.

I will simply add to the foregoing history that though the literature of the surgery of the kidney is now so large that it may already include the consideration of this question of surgical kidney in its application for relief by surgical measures, yet I have so far failed to find any similar cases; carrying my investigation in the Index Medicus, however, only as far back as the year 1886.

The first question that comes to the mind of every surgeon reading this report is, How often may such a fortunate condition of affairs be found in cases of surgical kidney? I had, of course, known that surgical kidney was occasionally one-sided, but believed this to be a very rare occurrence, but its frequence was unknown to me. An imperfect endeavor has nevertheless been made to get some further light upon this latter point. I cannot pretend to have made anything more than a cursory examination for data in this direction, but it is not difficult to place the fact squarely in position that this form of suppurative nephritis may not infrequently be confined to but one side. For instance, Goodhart, in an article in Guy's Hospital Reports of 1874, collected 270 cases of deaths from urinary disorders, and in these were 130 cases of surgical kidney, as follows: In 100 strictures, 41 of suppurating kidney, of these 3 cases one side only affected. In 27 prostatic hypertrophy, 20 suppurating, 1 confined to one side. In 14 cancers of the bladder, 6 suppurating, 2 confined to one side. In 44 stone, 31 suppurating, 8 to one side. In 29 cancer uteri, etc., 6 suppurating, 0 to one side. In 56 from paraplegia, 26 suppurating, 56 to one side. This makes an average of 14½ per cent. for one-sided renal infection.

In the article whence these statistics were taken, however, the condition of surgical kidney is more or less mixed up with single or multiple abscesses of considerable size. Therefore, its value is not as great as it would otherwise be. I have taken pains, therefore, to collect from the records of the New York and of St. Luke's Hospitals, in this city, forty-five cases, of which six were one sided in their lesions, and also from the brochures of Malherbe, "De la Fièvre dans les Maladies des Voies Urinaires," 1872, and of Bazy, "Des Lesions des Reins," etc., 1880, other cases, in six of which one-sided lesions existed, which make a total of 71 well-defined, undoubted acute cases of surgical kidney. Of these both organs were affected in 59 cases and only one organ in 12 cases, that is to say there were about twenty per cent. that could be attacked, other things being equal, surgically. We can, therefore, feel more hopeful in such conditions than, I must admit, I certainly have been in the past.

From the manner in which the kidney substance pouted out beyond the divided capsule after the first incision was made into this organ I could not but feel on reflection that even in those cases, perhaps, where both sides were involved, something might be done for the relief of tension as well as for the egress of pus, etc., by means of a free incision similarly made into the kidney substance.

Hence, in conclusion, with the happy experience of the present case I would consider it hereafter justifiable, if the patient's general condition would warrant it, in a case of acute septic invasion of the kidneys to make on one or both sides an exploratory incision not only in the hope of relieving the acute interstitial invasion, but also of perhaps encountering a larger and well defined focus of pus, which pathological condition cannot always, it is fully understood, be readily discriminated from the more dangerous lesions of the veritable surgical kidney. Should the symptoms point, as in the case just narrated, to one kidney only, or should a double exploratory incision show the same result, a nephrectomy may with some hope now be resorted to.

END TO END INTESTINAL ANASTOMOSIS BY THE USE OF MURPHY'S BUTTON, WITH REPORT OF CASE.

By WILLIAM W. STEWART, M.D.,

COLUMBUS, GA.

On February 27, 1894, I was asked by Drs. C. L. Williams and R. E. Griggs to operate upon a case of strangulated hernia which that day had fallen into their hands as city physicians.

History.—E——, male, aged twenty-three; occupation butcher. Well developed, six feet in height. From earliest recollection had been troubled with an oblique inguinal hernia of left side, which previously had been easily controlled by the wearing of a truss. February 25th arose at 6 A.M., and before applying truss bathed and dressed. While thus occupied hernia came down, causing with its descent some pain, which attracted his attention. On trying to reduce hernia he found he was unable to do so, and summoned medical assistance. Opiates, cold and hot applications, taxis, and the usual rôle of methods of relief were tried successively by his attendants with no avail. This was continued till the morning of the 27th, when case was reported for the hospital. Patient was immediately removed by the order of Drs. Griggs and Williams to the hospital, where at 3 P.M. I first saw him. Condition at that time was one of profound shock. Limbs flexed upon the abdomen. Facial expression pinched and drawn. Some tympanites; pulse, 145 to 160; respirations quick and jerky; constant hiccough; vomiting persistent prior to entering hospital.

At 3.30 P.M., in the presence of Drs. C. L. Williams, J. H. McDuffie, and J. P. Martin, of Birmingham, Ala., and assisted by Drs. George J. Grimes, R. E. Griggs, and McD. Blanchard, the operation was performed. Ether was administered; site of operation was well scrubbed with tincture of green soap and hot water and shaved, then washed with bichloride solution of 1 to 1,000. An incision was then made from a point just above external ring to bottom of scrotum. Tissues were swollen and œdematous; sac being opened, there gushed out three to four ounces of blood-stained serum, having some bad odor, which brought into view a large purplish black mass adherent to bottom of sac, which proved to be omentum. This being drawn to one side, a mass of small intestine about ten inches in length was exposed. Intestine and omentum both proved gangrenous and extremely friable. Internal and external ring were then both incised, freeing the strangulation and giving more room for operative procedure. Gangrenous intestine

was drawn well out, and a shoemaker's stitch with a knot in each stitch was taken through mesentery along entire length of gut to be excised, thus controlling perfectly all hemorrhage. Intestine was then grasped by two assistants just past the gangrenous demarcation between thumb and forefinger, and well compressed. Then with scissors ten inches of gangrenous gut was excised. A purse-string suture was then introduced into both ends

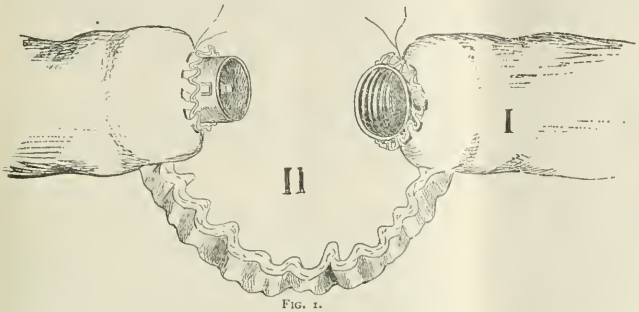

Fig. 1.

of gut and Murphy's button adjusted, by which both peritoneal surfaces were brought into perfect apposition. Sutures were then placed, closing gaps in mesentery. Gut was carefully cleansed and dropped back into abdominal cavity.

Attention was now turned to the omentum, which formed the principal bulk of the hernial mass, eighteen inches of which proving gangrenous and friable, its removal was necessary. Same ligature stitch was introduced as was used in mesentery, and mass excised. Sac was then carefully freed and transfixed with silk ligature and stump sewed into wound. Wound was closed with silkworm-gut sutures and tight compression-bandage applied. Condition of patient from first to last was very bad, radial pulse often becoming almost imperceptible, calling for frequent hypodermic injections of strychnia, nitroglycerine, and whiskey. After being placed in bed a

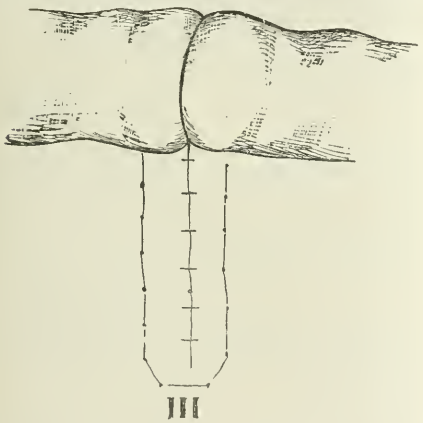

Fig. 2.

hot, normal salt solution enema was given, which quickly raised volume of pulse.

By morning patient reacted nicely and continued comparatively free from pain. Pulse remained high, 140; temperature ranged from 99° to 100° F. till the third day, when it reached normal.

On the third day high enema was given, which was followed by copious action. These were continued every second day, each time being followed by passage of fecal matter till the thirteenth day, at which time the button was passed and immediately followed by three large movements slightly streaked with blood, since which no blood has appeared, bowels continuing to move twice daily. Abdominal wound healed kindly; wound in scrotum did not, as some of the cellular tissue became gangrenous and was removed, this being caused by the strangulated condition in which it remained for so long. Diet was restricted to milk till the fifteenth day.

This method of end to end intestinal anastomosis has advantages so patent that it immediately recommends itself to every abdominal surgeon. Its advantages are: 1. The rapidity with which anastomosis can be performed. 2. The normal continuity of the lumen of the gut is retained. 3. The perfect apposition of peritoneal surface under gentle pressure, thereby guaranteeing prompt and perfect union. 4. Apposition produced prevents perfectly escape of gases into peritoneal cavity. 5. When button passes there is nothing left in intestinal coat other than normal tissues.

Dr. Murphy, by his genius, has made all abdominal operators his debtor through the gift of his "button," a perfect mechanical contrivance which changes often

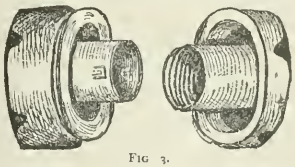

Fig 3.

extremely difficult and hazardous procedures to rapid and much safer operations.

The button, as now manufactured, is of nickel plated brass. The material used in its manufacture can, I think, be improved upon by substituting aluminum for the brass, thereby reducing its weight, which will facilitate its passage from the intestine.

SOME PRACTICAL OBSERVATIONS ON SO-CALLED MALARIA BEING A WATER-BORNE DISEASE.[1]

By W. H. DALY, M.D.,

PITTSBURG, PA.

The writer has for the past twenty or more years spent probably an average of two months annually in the recreative sports of the field, forest, and stream. The largest proportion of these holiday jaunts have been passed in the lowlands, or in the swamps of the lake-sides or sea-side, in the pursuit of wild fowl shooting. Many, if not most of these regions were, and are generally admitted to be, intensely malarial in character, notably the vast Kankakee swamps in Indiana.

In former years, before the writer had noticed certain conditions, and used certain precautions, he was subject to malarial disease of a continuous or recurrent type, clearly traceable to his having drunk the shallow well- and swamp-water of these regions.

Observations and studies on the subject, and investigations made in various districts from Manitoba to Louisiana, and all along the southern coast of the Atlantic Ocean, and of Cuba, Yucatan, and other districts in Mexico, lead the writer to the conclusions that so called malarial disease is not easily, if at all, contracted by inhaling so-called malaria or bad air, of the low, swampy, or new lands, but it is distinctly, if not almost exclusively, due to drinking the water that has come into contact with, and become infected with the malarial germs or in-

[1] Read before the meeting of the American Climatological Association, in Washington, May 29, 1894.

fusoria that exist in the earth and waters of the swamp and lowlands. This germ does not ordinarily, if at all, float in the air during the day, nor does it find easily a vehicle in the fog or vapors of the night.

Indeed it is difficult to understand how one is to avoid the night-air, even if it is conceded to be deleterious—a conclusion I much doubt. Does any other air than night-air exist at night? Is it possible to breathe any other? Is there any habitation sufficiently sealed against the outside air to make the breathing of outside night-air impossible?

I understand the United States Navy Department years ago made, and they may still, for aught I know, make, a point of advising the anchorage of war vessels in streams and waters of malarial districts so as to avoid the air-currents from the swamps near by, lest the air, laden with poison, should be inhaled by the officers and sailors.

I will venture to say that no air from the foulest swamp can be more deadly than the foul air that is produced by the emanations from the air passages, and from effete matter from human beings crowded into the hold of a ship. That sort of air is indeed malarial, while the swamp air I believe to be comparatively safe and wholesome, but of the swamp water beware for any other purpose than ablution.

I am fully aware that in taking the ground I here occupy I may be considered to be too radical, and that my position may be regarded as untenable. If so, I can only answer that every observing medical man must and is bound to tell honestly and fairly what he has gathered from his own experience, observation, and studies, and it must be considered that my observations have been prolonged, extensive, and fairly intelligent, and made not, so to speak, second-hand, but personally and upon the ground in districts distinctly malarial, and that during the years that I and others had been careful to avoid the mists and fogs of the malarial regions, as well as the out-door night-air, but all the while using the surface-, swamp-, or shallow well waters for drinking, I, as well as others of my friends, suffered from malaria, so called; but later on, and during the past twelve years, while abstaining from drinking the surface- or well water, and with the utmost freedom of exposure to the out-door night-air, fogs, rain, and mists, at all times, night and day, we have enjoyed complete immunity.

Whoever has shot wild fowl knows full well that the best opportunities come to a sportsman amid storm and rain, with the early mists of the morning, and when the marshes are redolent with the vapors of the evening, just at nightfall, when the wild fowl are flying to and fro, seeking their favorite haunts in the marshes to sleep.

Then there is the journey of miles homeward to the club-house, farm-house, or camp, in the small ducking-boat, that brings one to the fireside possibly not earlier than eight to ten o'clock at night, so that exposure is positive, and close to the marsh and water, as one is sitting in a small boat.

I mention the foregoing as relevant, since medical men are still the readers and learners from the classic text-books of Watson, Tanner, and Niemeyer, not to speak of many others.

Tanner says, in his most attractive style: "It is worth remembering that malarial districts are most dangerous at night, and that this poison lies low, or, as Dr. Watson says, 'loves the ground.'" And Dr. MacCullach says: "It is a common remark in many parts of Italy, that as long as laborers are in an erect position they incur little danger, but that the fever attacks those that sit or lie on the ground."

All of the older and most of the new text books lay stress upon the strictly malarial feature of the disease, that is to say, that the poison is breathed into the system. Some of the newer writers, it is true, give some prominence to the source of contagion, from drinking the infected land- or swamp-water, but still adhere to the belief in the medium of the air as a chief or equal source of infection. This latter belief is a gross fallacy in my opinion, and will not stand the test of practical proof, if the factor of drinking land- and swamp-water is eliminated.

In recent years, through the digging up and renewing of the aqueducts, which for centuries had supplied the city of Rome with drinking water, it was discovered that many of her wealthy and leading citizens had, during the period of her grandeur and decadence, actually been guilty of clandestinely draining the sewage from their country and suburban villas into the very aqueducts that supplied the city and their fellow citizens with drinking-water.

Can there be a greater example of public degradation, and can any evidence be stronger than this, that a larger part of the Roman fever, which is unmistakably malarial, has been due to contaminated drinking-water rather than to infected air?

As I say, during these earlier years that I and others of my sportsmen friends drank freely from the running brooks and streams and from the swamps, we also endured for the sake of the sport of shooting wild fowl, an occasional shake with the ague and many of the other disagreeable symptoms that, while they do not amount to an actual chill, make one feel about as wretched as it is possible for one to feel and go about. And I and the others were all the time taking heavy doses of quinine as an antidote. In fact, no trip was ever taken to the swamp for wild fowl without plenty of quinine and a little whiskey.

But during the past twelve years, and since we have avoided drinking the surface-water, and, when it was possible, even the deeper well-water of the region except after boiling the same, I have been quite free, as have been others of my friends whom I have advised.

If one cannot get boiled water any other way, it is well enough to take the water that has been boiled in a brewery, viz., in form of beer.

It is now generally conceded that the malarial germ is the cause of the fever. Lemaire, Klebs, Crudeli, and others have isolated certain forms of bacillus, which they believe to be specific of malaria. Laveran first, and Richard and Marchiafava, and Cella, also found in the blood three forms of protozoa, one of which particularly produced intermittent fever by inoculation. The germ is infusorial, and exists in the water and soil.

E. Maurel, in the *Semaine Médicale*,[1] announced to the French Association for the Advancement of Science, that it is always easy to distinguish a healthy from a malarial soil.

The water from the malarious districts always contains numerous micro-organisms, some of which are possibly Laveran's corpuscles in an early stage of their development, but it is not yet certain that the germ has been isolated outside of the human body.

In regard to the real value of Laveran's corpuscles in the production of malaria, he himself believes them to be indirectly concerned in the production of the infection, although their relation to it has not been absolutely demonstrated. It is probable, according to Rougette,[2] that the malarial microbe gives rise to symptomatic fever by reason of its activity in producing leucomaines. During the access of fever the microbe is eliminated by natural emunctories.

The liver is a destroyer of leucomaines;[3] but, as my paper is upon the question of the manner in which the so-called malarial infection enters the human body, whether through the air-passages, or the digestive tract by means of drinking-water, I must not wander into other phases of the subject. I am firmly convinced that farther investigation will as surely lead us to the knowledge that so called malaria is, strictly speaking, a water-borne disease, as it is that we are now being led to the right conclusion, by Ernest Hart and others, that chol-

[1] Annual Universal Medical Sciences, 1888.
[2] L'Union Médicale.
[3] Annual Universal Medical Sciences, 1888.

era is also a water-borne disease; and it is our duty to educate the profession, and the public, especially those who make up the population of the malarial districts, that it is the water they drink, and not the air they breathe, that decides whether they will suffer from malaria or not.

It is a great pleasure to have come into contact with many of the intelligent medical men, who practise in the southern and malarial districts of our country, whose beliefs are far in advance of the vague and obsolete views of many of our writers of text-books. If there were as many such men in our profession as there ought to be, the use of quinine as an antiperiodic would soon become unnecessary. In fact I regard the malarial type of fever, in the United States at least, as clearly preventable as any other disease that we have to deal with, and by the simple method of drinking only carefully collected and uncontaminated rain-water, which, as a simple precaution, might be boiled.

I have observed on some of the plantations of the South, that among certain cattle and horses that have been shipped from the North for breeding purposes, many of those that were turned out on the marshes to drink the surface-water sooner or later sickened and died with what was known as climatic fever (malarial); but the animals that were kept stabled, and drank only the deep well- and cistern-water, would thrive as well as they did in the North.

In the *British Medical Journal* of October 21, 1893, Oswald Baker, surgeon of the British Army, writes that on the steamer Scindia, which sailed from Bombay for Marseilles on August 5, 1893, there occurred several cases of acute malarial fever that were, from the account given by Mr. Baker, clearly traceable to the drinking-water, which was taken on the ship at Bombay, and not in any way due to the air that the patients breathed.

It is a pleasure to note in the medical journals—the great educators of those who write text-books—the accumulating testimony of careful observers, who agree with my observations and experience herein set forth.

In the MEDICAL RECORD of January 28, 1893, E. D. S. writes that five out of a family of six, adults and children, had suffered pretty continuously for the past six years with malaria (so diagnosticated by the best physicians), at times being quite seriously ill, with temperature 104° F. Quinine was administered. Seven months ago a Pasteur filter was introduced, and quickly every symptom of malaria disappeared. Another family had the same experience.

Dr. L L. Von Wedekind, U. S. Navy, in the MEDICAL RECORD of February 11, 1893, gives a history of some cases which indicate that to drinking the land-water was traceable the cause of malarial fever on the coast of southwestern Africa. The doctor says "that land-water is considered as a cause, and a prominently exciting cause, with naval medical officers," as is proven by the orders issued by medical officers of the different ships serving on the coast, prohibiting the use of native water for drinking purposes.

In the region about Elizabeth, N. J., some years ago, in conversation with some well-educated medical men—among others Drs. W. J. Lumsden and Oscar McMullen, who were and are careful observers, I learned that their outbreaks of malarial fever (fresh cases) usually occurred in the early autumn, following a period of rainfall and a few subsequent warm days, but new cases only occurring among those who drank the land-water.

The inhabitants who used the storm-water, carefully stored in clean cisterns, especially above ground, uncontaminated with the soil-water, are immune from the attacks, and while the disease during the past two years has presented some varying features to these gentlemen, such as catarrhal jaundice, of an endemic character, traceable to malarial influence, as well as other forms, there does not appear to be anything to controvert the evidence that these patients took their malaria in water, either as drink, or upon the leaves of the turnip-top, greens, kale, spinach, cabbage, or other vegetables that grow close to the ground and have surface water on their leaves. These vegetables are abundant and usual in the culinary supplies of the region.

One may ask, Why do not the New Yorkers and Philadelphians also get malaria from the same surface-water, dew, and moisture upon the leaves of these same vegetables, shipped from this productive region to those cities? The answer might well be that they do unless the leaves are well washed in uncontaminated running-water before being presented for use as table food.

Dr. R E. Boyken, of Smithfield, Isle of Wight County, Va., informed me that thirty years ago he had studied this subject, and had since induced as many of his patients and fellow-citizens of his county as possible to adopt the cistern-water as a beverage, and all those families who fell in with and followed out his views are of healthy and ruddy complexion and free from malarial disease, while those who continued to drink the land-water are subject to attacks of malarial fever.

That so called malaria is an autochthonous disease, finding its way into the human body through the food channels, there can be little or no doubt in the mind of the original and unfettered observers.

It is true we have not found what we know to be the malarial germ and isolated it outside of the human body, and we are not sure either that we have found the typhoid germ in the soil or in the suspected drinking-water; yet we are quite sure that we trace typhoid origin through these sources.

Let us eliminate the atmospheric factor in malaria by noting in each case if the soil-, surface-, or shallow well-water has been drunk by the patient. If this has been done, the case is obviously one that has been exposed to the infection in its most potent form. There can be no scientific question more strictly in the line, and touching the true object, of this learned Association than this, and it is to be hoped that in the future papers will be invited from those who have had an opportunity of observing data bearing upon this, the chief phase of this unsettled question.

We do not merely want a rehash of old dogmas from the text-books, or echoes from time-worn unfounded opinions, garbled by one so-called authority from an antecedent authority, but let us have the fresh and unbiased observations and views of the thousands of intelligent medical men who have the opportunity in their own neighborhoods to make original observations and report them.

Dr. W. J. Lumsden, of Elizabeth, N. J., recently wrote me that his case-books show that fully ninety-eight per cent. of patients who have suffered from malaria for the past ten years got their supply of drinking water from the dug wells of the region. Those inhabitants who used the water from driven-wells, thirty or more feet deep, have had an unmistakable improvement in health. A driven-well is made by driving an iron pipe with a perforated inlet down deep into the earth, through strata of clay or marl, which seals off the surface land-water. So it will be understood that the water from the driven-well is pretty securely sealed against surface-water by its small calibre and tight fit in the soil through which it penetrates.

Since writing this article I observe the growth of medical opinion is gaining strength along the lines and in the direction of the contention of this paper. The *Journal of the American Medical Association*, of May 12, 1894, contains the following:

"Dr. Richard H. Lewis, of the North Carolina State Board of Health, has prepared a circular letter for the medical men of his State, regarding the influence of well-water in the production of fever and ague. He gives a homely illustration in the recited history of two families who resided as next-door neighbors in one of the eastern towns of his State. The two families each contained two adults—father and mother—and seven children. The two families were friendly, but their homes were

sufficiently separated to require independent water-supplies for each. One family drank from what was regarded with pride as 'the best well in town,' the other of rain water caught in wooden tanks. The members of the first family were constantly sick with malarial disease of one kind or another. Those of the second never had even a chill."

It is the wish to build up a line of testimony of a like character, if such can be obtained through the medical men of North Carolina. To this end he has written the appended letter, giving an invitation to a co-operative study of the well-water origin of malarial diseases.

"Dear Doctor: The evidence that malarial diseases are introduced into the system in many, if not most, instances through the medium of the drinking-water, is to my mind conclusive. The water containing the germs, or plasmodia, is surface- or superficial soil-water. Those living in malarial districts who confine themselves to water from cisterns or wells driven or bored beneath the stratum of marl or impervious clay—in other words, beyond the water which soaks down from the surface—are to a large extent free from attacks. If the people of our eastern counties could be generally convinced of this fact, and thereby induced to act upon it, the health conditions of that really fine section would be revolutionized for the better. To bring this about is the object of the Board of Health. In order to do this, facts must be presented to them in the concrete—not by illustrations from 'Asia and Spasia and t'other side o' Hillsborough,' so to speak, but by instances from among their own neighbors. I write to ask you if you know any facts bearing on this subject, and if so, that you will write them to me in detail at your earliest convenience. Give me the name and post-office of the head of the family having the experience. If not personally familiar with the facts, send me the name and address, that I may write to him direct."

WATER IN DIET AND THERAPEUTICS.

By BRADFORD C. LOVELAND, M.D.,

CLIFTON SPRINGS, N. Y.

The subject of water in diet and in therapeutics is one which has engaged the thought of medical men more or less since the infancy of the art. Yet I fear it is to-day given very superficial attention by too many of the profession.

The Medical Record of March 3, 1894, gives a very interesting editorial on water, setting forth its ancient prestige, and undoubted worth in combating disease, but refers principally to its external use.

I might fill this paper with observations and experience as to its external use, but my object is to show its use in diet, and in internal medicine.

Among the earliest medical writers we find water praised in terms which could not apply to any other article of food, or remedy in disease.

Galen said: "Cold water quickens the action of the bowels, provided there be no constrictions from spasms, when warm water should be used.

"Cold drink stops hemorrhage, and sometimes brings back heat. Cold drinks are good in continued and ardent fevers."

In biliousness, plethora, obstinate ophthalmia, spasms, headache, gastric fever, hiccough, cholera morbus, he recommended tepid or warm water drinking.

Celsus recommended water in fulness of the stomach, headache, pains in the joints, diarrhœa, hemorrhoids, and in hysterical and hypochondriacal conditions.

Hoffman pronounced water a universal remedy. He asserts that "it is suited to all persons at all times."

Cheyne said, "Without all peradventure water was the primitive original beverage, and is the only simple fluid fitted for diluting, moistening, and cooling."

But enough quotations; suffice it to say that the internal use of water as a remedy has been prescribed and written upon, from the earliest times, by such men as Gregory, Londe, Sir John Ross, Lanzani, Drs. Currie, Forbes, and John Bell.

In the early part of this century Priessnitz, while using so many external water treatments, did not fail to see the great value of its internal use. And his followers, in the early-time "Water Cure" in this country used to prescribe the drinking of water in quantities which would seem to most of us to be incredible.

In the present time it seems more popular for physicians to prescribe some bottled water with a thrilling prophecy of rapid cure on the label, when, in reality, any good, wholesome water would do quite as much, or perhaps more, good; for patients will hardly drink enough to benefit them when it costs them from twelve to twenty-five cents or more a quart. And besides that, they will frequently abstain from drinking ordinary water because they have been ordered to drink *Wild Cat* Lithia Water.

What is the mission of water in the body?

Besides the object of relieving thirst, it acts as a solvent for, and an aid to the absorption of, all the digested food material, which it takes with it on its way to the blood.

The water in the blood forms a medium for holding in solution and suspension all the organic and inorganic compounds needed for the nourishment of the tissues, and also the effete materials on their way to the various excretory organs.

As the water filters out through the kidneys and the glands of the skin, again its solvent power is used, as it carries with it the urea, creatine, phosphates, sulphates, chlorides, and other useless materials from which the blood needs constant cleansing.

Should water, then, become deficient in the body from any cause, osmosis in every part must be impeded to a greater or less degree, as there are varying degrees of selective affinity for water in the different organs.

Perhaps the bowels are the first to suffer, becoming constipated from lack of moisture in the intestinal secretions; then the liver, the bile becoming thick. Next the kidneys suffer, being compelled to excrete too concentrated a secretion.

Too great concentration leads to precipitation of soluble ingredients, forming calculi, as gall-stones or renal calculi.

Then, too, we will find the digestive fluids are too thick and cannot accomplish their work well.

Another most serious consequence of lack of fluid in the blood is the congestions, both primary—from overwork of certain organs, as the liver and kidneys—and reflex—from nervous irritations, these commonly occurring in the head and spine.

The lack of fluid in the blood also predisposes to arterial degeneration with its accompanying evils, and the uric-acid diathesis may in part be traceable to such a cause, for the concentration of blood and secretions renders assimilation or oxidation more difficult and less perfect.

Then, again, the abnormally concentrated blood, with the retention of excrementitious material, acts as a slow poison, producing mental depression and other symptoms.

When there is a marked increase in the amount of water ingested for a few days, or even for a few weeks, it may be that the only apparent action is on the kidneys, but later the bowels and skin will show the effect by becoming more active.

That the blood may be changed by the judicious use of water, I have abundant evidence, as two or three cases will prove.

Case I.—July 8, 1893, Mrs. D——, aged thirty-five, came to me with the impression that she was anæmic from chronic malaria, complained that she felt unreasonably and unaccountably depressed, seemed to have lost her love for her children and her home. Suffered with gas in her stomach. Was taking a prescription containing iron, arsenic, and quinine. She had been complain-

ing of above symptoms only for a few weeks. On examination I told her that she was not anæmic but the reverse, and had a congested stomach and liver, and asked her if she was accustomed to drink water. Her reply was: "Very little, for I am seldom thirsty." An examination of blood was necessary both to convince her that she was not anæmic, and also that she needed to drink water. Blood examination showed, hæmoglobin, one hundred and eighteen per cent.; red corpuscles, 6,440,000 to c.mm. Treatment: Moderate doses of nux vomica and hydrastis, six to eight glasses of water daily, and a diet largely of vegetables and grain foods. On the 27th of the same month blood examination showed, hæmoglobin, one hundred and five per cent; red corpuscles, 5,480,000 c.mm.

With the change in blood had come a change in her digestion and a removal of sufficient of her bad feelings, mental and otherwise, so that she went home and again took up the care of her family. Keeping up the water-drinking and diet at home.

Case II.—February 20, 1893, Mrs. P——, aged forty-eight, rheumatic gout, subacute, six months' standing, had not menstruated in two years. Inquiry showed chronic constipation. She rarely ever drank water, except in the tea or coffee she took at her meals. Had been a nervous invalid previous to her present illness. I could not induce her to drink water until I had shown her the concentrated state of her blood by examination. She always insisted that it gave her a load in her stomach.

February 20th.—Hæmoglobin, one hundred and twenty per cent.; red corpuscles, 7,080,000 c.mm. Treatment: Diet, meat sparingly; vegetables, fruit, and grain foods freely, except sugar and white bread. Water, 2½ to 3 quarts per day. Medicine: Phosphate soda, 30 grains before each meal in a glass of hot water.

April 5th.—Blood examination: Hæmoglobin, one hundred and ten per cent.; red corpuscles, 5,020,000 c.mm. Treatment continued.

June 2d.—Hæmoglobin, one hundred per cent.; red corpuscles, 4,120,000 c.mm. During the above time her constipation was cured. Her arthritis stopped attacking new joints, and the inflammation subsided in the ones already diseased. The disease has remained checked, although several of the joints in her hand are still, and will probably remain, stiff.

Case III.—February 25, 1893, Mrs. J. P——, aged forty-four, plethoric habit, suffered from acid stomach and had repeatedly passed biliary calculi. The last attack of the kind occurring after she came under my care. Had almost constant pain and feeling of pressure in head and back of neck.

February 25th.—Blood examination: Hæmoglobin, one hundred and eighteen per cent.; red corpuscles, 6,800,000 c.mm. Treatment: Diet, such as to exclude concentrated starchy foods and sugar, and limiting meat to one meal a day. Water, 2½ to 3 quarts per day. Medicine: Phosphate of soda, 30 grains, in a glass of hot water before each meal. Treatment continued till June 6th, when blood examination showed, hæmoglobin, one hundred and eight per cent; red corpuscles, 6,300,000 c.mm. This was a chronic case, so that improvement was slow, but all the troublesome symptoms were much lessened, and while I have not seen her since June last, I heard from her frequently until last December, during which time she had continued the treatment and had also continued to improve.

The above cases will be sufficient to illustrate what I consider the influence of water on a considerable class of cases, for while I did give medicines, still I think the results were due much more to diet and water than to medicine.

Dentistry and the Postal Service.—The regulations of the British Post-Office require that every unsound tooth shall be taken out of an applicant's head before he can be employed. An unfortunate girl who recently was examined for promotion had fourteen teeth taken out at one sitting.

A COMPARATIVE STUDY BETWEEN THE RESULTS OBTAINED BY EXAMINATION OF THE STOMACH CONTENTS BY MEANS OF A STOMACH-TUBE AND EINHORN'S STOMACH-BUCKET.

By GEORGE S. DICKINSON, M.D.,

ERIE, PA.

The examination of the stomach contents serves the purpose of ascertaining the chemical condition of the gastric juice. As is well known, the main point of examination is to determine the amount of HCl present, or the total acidity, and the presence of the ferments pepsin and rennet. The acidity is, as a whole, formed by the presence of free HCl, the lesser part by acid salts and acid albuminates, except in grave pathological conditions, when we find the acidity to consist of organic acids, the principal one being lactic acid.

The chemical examination of the stomach contents is best made either one hour after Ewald's test breakfast, or three or four hours after Leube's test dinner. The test breakfast consists of a roll without butter, and a cup of weak tea without sugar or milk.

The test dinner consists of thirteen fluid ounces of either flour or barley soup, two ounces of scraped beef, one and two-thirds ounce of wheat bread.

Einhorn and Ewald prefer the test breakfast for correct examination. The examination is best performed as follows: First, test with litmus paper, to ascertain if the contents be acid, alkaline, or neutral; the next step is to test with congo paper, to ascertain the presence of free acids. The Uffelmann's reaction or test serves to show the presence of lactic acid. This test is performed as follows: Take about two drachms of a two per cent. phenol solution in a test tube, then add a drop of liq. ferri sesquichlorati. If lactic acid be present in any quantity the solution will turn canary yellow.

To determine the total acidity, take five c.c. of the obtained gastric contents which has been filtered, and add a drop of phenolphthalein; after this is done add as much of a one-tenth standard solution of sodium hydrate until the filtrate begins to turn red, then multiply the number of c.c. of the sodic solution used by twenty, which gives us the total acidity. After having ascertained the total acidity, the next step is to determine the amount of free HCl present. This is done by adding a drop of congo red to five c.c. of the filtrate, then by adding the one-tenth sodic solution until the filtrate begins to turn reddish-brown.

The quantity of the reagent used, multiplied the same as in ascertaining the total acidity, gives the amount of free HCl present. Having found the quantity of free HCl present, we look for the ferments, the most important one of which is pepsin; but as the presence of one ferment shows the presence of the other, there is hardly any necessity of making other than the test for rennet.

This test is performed as follows: Take about two drachms of milk and add a few drops of gastric juice, then place in warm water for ten to fifteen minutes. If rennet is present the milk will become curdled, and will not flow out of the glass.

Having now described the usual method of examining the stomach contents obtained by means of the tube, I shall briefly describe Einhorn's bucket and the method of its use, and append hereto a table of the results of the examination made of the contents of the stomach of the same individuals and at the same time, firstly by the stomach-tube, and secondly by Einhorn's bucket, showing comparative results obtained from both methods.

As is well known, the insertion of the tube, although the procedure is not a difficult one, is, notwithstanding, very disagreeable to some people, and sometimes its use is not allowable, especially in cases where there is a suspicion of ulcer. Einhorn[1] devised the stomach-bucket, to be used instead of the tube in cases of very nervous people, and also where the tube would be otherwise

[1] Max Einhorn: MEDICAL RECORD, July 19, 1890.

objectionable. The bucket is of solid silver, about three-fourths of an inch in length, shaped like an empty capsule, and has a little rod at the top where the silk is fastened. On one side is a wedge-shaped opening and on the other is a small hole about the size of a pin-head, which acts as a vent. The bucket will hold about half a drachm. The method of introduction is as follows: A silk thread is fastened to the arch of the bucket and a knot is made at a distance of sixteen inches from the attachment; then, in order to obtain a sample of the stomach contents, the patient is asked to open his mouth widely and the bucket is placed on the root of the tongue, almost in the pharynx, when the patient should be told to swallow. The vessel after a short time, one or two minutes, enters the stomach. As soon as the knot of the thread is at the lips, the bucket is in the stomach, for the distance from the teeth to the cardiac orifice is usually sixteen inches. The bucket is permitted to remain there for about five minutes and then withdrawn. During the withdrawal of the apparatus a resistance is usually felt at the introitus œsophagi. To overcome this difficulty, when the apparatus is at that narrow point the patient should swallow. By the act of swallowing the larynx is pushed forward and upward, and thus the passage is free and the bucket can be withdrawn easily. If the stomach is not empty, the bucket returns filled, and the amount is sufficient for making various important tests. In people suffering from an abundant secretion of the mucous membranes the bucket might become filled with mucus before entering the stomach, and then, in emptying the vessel, one would find clear mucus instead of chyme. In such cases it is necessary to make the trial again and to cover the opening with a thin gelatinous capsule, which keeps away the mucus from the vessel on its way to the stomach; there the capsule is quickly dissolved and the stomach contents can now enter the bucket. On its return from the stomach, the bucket being filled, the mucus cannot, to any extent, enter into it. As with the tube, the best time to use the bucket is one hour after Ewald's test breakfast. The bucket should always be dipped into warm water before using, in order to wet the inside so that the stomach contents may readily enter it. After using the bucket, as well as any other part of stomach apparatus, it should be washed in an antiseptic solution.

The method of examination of stomach contents obtained by means of the bucket is, according to Einhorn, as follows: The contents are emptied on a small porcelain dish, then, by means of litmus paper, ascertain whether the contents be acid or not; if acid it will turn the paper red. With congo paper, whether there are free acids or only acid salts, the presence of free acids turns the congo paper blue, otherwise the paper remains unchanged. If there are free acids the test should be made to ascertain the presence of HCl. For this purpose take one drop of the contents, and one drop of Guenzburg's solution, and mix them thoroughly in a porcelain dish, which is then heated over an alcohol lamp until the fluid evaporates; a cherry-red color appears in the same spot if HCl be present, even in a very small amount. Having ascertained the presence of HCl, the acidity can be approximately determined by gradually diluting one drop of the contents with water, until the above-mentioned Guenzburg's reaction for HCl begins to disappear. Normally the stomach contents can be diluted from eight to ten times, and yet obtain Guenzburg's reaction. In this way cases where we are able to dilute five times, or even less, must be considered as cases of subacidity, and cases where we are able to dilute more than twelve times as cases of hyperacidity. In cases where no acidity whatever is found, we have to deal with anacidity.

The test for rennet is done as previously described.

Take much care in introducing the bucket, and you will not meet with any failures. The silk should be good and strong, and must be changed very often. It is best to speak to your patient while the bucket is being swallowed, or to make him laugh, in order to assist the bucket into the stomach. We very seldom meet with persons who cannot swallow the bucket. The bucket has been used by many in this country and in Europe; Stockton, of Buffalo, Fenwick, of London, Stewart, of Philadelphia, and others. Tweedy (in the *Dublin Medical Journal of Medical Science* of February, 1894) reports cases in which he has used it advantageously.

While studying under Dr. Einhorn, of New York, I made the following examination to compare the two methods:

Number.	Name.	Date.	Stomach Tube.				Stomach Bucket.			Remarks.
			Time when examined.	HCl.	Acidity.	Free HCl.	Rennet.	HCl.	How many times diluted.	Rennet.	
1	W. M.	January 3, 1894	One hour after breakfast	+	100	90	Present.	+	18+	Present.	A very nervous patient.
2	F. G.	February 25, 1894	One hour after breakfast	+	96	86	Present.	+	20+	Present.	
3	M. S.	January 5, 1894	One hour after breakfast	+	100	80	Present.	+	18+	Present.	
4	M. K.	February 11, 1894	One hour after breakfast	+	94	82	Present	+	15+	Present.	
5	A. H.	January 5, 1894	One hour after breakfast	+	90	75	Present.	+	22+	Present.	
6	F. G.	February 15, 1894	One hour after breakfast	+	80	70	Present.	+	6+	Present.	
7	W. G.	February 15, 1894	One hour after breakfast	+	76	60	Present.	+	8+	Present.	
8	W. S.	February 4, 1894	20 minutes after breakfast	+	76	56	Present.	+	15+	Present.	One hour after meal stomach was empty. A case of hyperkinesis.
9	M. B.	February 8, 1894	One hour after breakfast	+	68	56	Present.	+	8+	Present.	
10	S. S.	January 2, 1894	One hour after breakfast	+	54	40	Present.	+	7+	Present.	
11	R. F.	January 2, 1894	One hour after breakfast	+	40	20	Present.	0	0	0	Very little contents with tube.
12	W. F.	March 3, 1894	1½ hour after breakfast	+	.....	.....	Present.	+	12+	Present.	Too small amount of stomach contents with tube to make examination.
13	S. L.	March 4, 1894	Two hours after breakfast	.....	.....	.....	.....	+	5+	Present.	Too little to make acidimetric test.

As a whole, from this table we can see that the method of ascertaining the acidity by means of dilution of stomach contents obtained by Einhorn's bucket corresponds closely with the results obtained by the acidimetric system, although there are sometimes exceptions (as for instance Case 6). The stomach-bucket and the simple method of testing the gastric juice as described above deserve high recommendations.

428 East Sixth Street, Erie, Pa.

The Consumption of Beer.—According to some statistics compiled in Vienna there was a vast consumption of beer in the world during the year 1893, amounting to over 4,500,000,000 gallons. Germany heads the list with 1,202,132,074 gallons, an increase of 34,000,000 over 1892, the consumption being thirty-three gallons per head, ranging from sixty-two gallons in Bavaria to twelve gallons in Lothringen; Great Britain second, 1,165,752,000 gallons, or thirty per head; America, including the whole of the western hemisphere, is third, with more than 1,000,000,000 gallons, or sixteen per head. More than 7,270,000 tons of malt and 82,000 tons of hops were used in the manufacture of the beer for the world.

The American Medical Association.—The State of Virginia with over 2,800 physicians has 38 members in the American Medical Association; North Carolina with 1,600 physicians has 17 members; Texas gives from her 3,700 doctors 71 members; Mississippi, 21; Kentucky, 87; Maryland, 49; Louisiana, 29; South Carolina, 18.—*The Southern Clinic.*

POINTS TO BE REMEMBERED IN THE PRACTICE OF ANTISEPTIC SURGERY.

By EDWARD PENDLETON, M.D.,

OWENSBORO', KY.

1. Remember to boil instruments for thirty minutes before an operation, when time permits.

2. Remember to use clean, filtered, boiled water in all operations.

3. Remember to immerse instruments only in a carbolic or Listerine solution; the mercurial solution blackens the instruments and ruins the edges.

4. Remember not to dip soiled cotton in an antiseptic solution, after it has been about the wound; use a new piece.

5. Remember not to touch a sponge or instrument that has fallen upon the floor; it might get back into the vicinity of the wound again.

6. Remember to put the suture or ligature back into the antiseptic solution when it has touched anything that is not aseptic.

7. Remember that the surgeon and his assistants are to scrub, cleanse, and disinfect their hands and forearms before an operation.

8. Remember that the vicinity of the wound is to be shaved, scrubbed, cleansed, and disinfected.

9. Remember not to use a rubber bandage in forcing blood out of a part, like a gangrenous or tuberculous limb, but simply apply constrictor above the point of disease.

10. Remember to use no antiseptic upon the peritoneum or any of the viscera; if the operation was aseptic, antiseptics could do no good; if the operation was not aseptic, antiseptics could not make it aseptic.

11. Remember to try always to arrest a bleeding artery by torsion, only use the ligature as a *dernier ressort*.

12. Remember that venous and capillary hemorrhage can be arrested by the application of a hot mercurial lotion to the bleeding surface.

13. Remember to use cocaine in amputating toes, fingers, etc., and in circumcision.

14. Never give ether when albumin is present in the urine, or when there is any pulmonary trouble.

15. Remember always to open an abscess by a free incision, wash out abscess cavity with a carbolic solution (1 to 10), insert a perforated drainage tube in the deepest part, and apply a moist antiseptic dressing.

16. Remember to wash gun- and pistol-shot wounds in a mercurial lotion (1 to 3,000), and pack the wound with iodoform gauze, so that it can heal from the bottom.

17. Remember to use black pins in surgical dressings; they will not rust and can be more readily seen.

18. Remember to let all rubber goods, such as catheters, rubber bandages, fountain syringes, rubber sheets, rubber bags, rubber aprons, dry before they are put away.

19. Remember to boil all instruments that have been used about a person with cancer, syphilis, or tuberculosis, in a carbolic solution (1 to 30).

20. Remember always to cleanse a hypodermic needle, and run a piece of wire through it after it has been used.

21. Remember to thoroughly wash, cleanse, and dry all instruments after each operation.

22. Remember to use gauze sponges, which can be thrown away after they have been used.

23. Remember to use silk in suturing parts about the face.

24. It is not necessary to have a caseful of instruments to perform an operation, only a few are at times necessary.

25. Remember always to cleanse and disinfect a catheter after it has been used; the most common source of infection of the bladder is by an unclean catheter.

26. Remember to use moist antiseptic dressings in all septic cases, such as abscesses, bone felons, lymphadenitis, etc., or where primary union is not expected.

27. Remember to remove silk sutures on the third or fourth day.

28. Remember that the edges of a wound have to be in exact apposition, and no turning under is to be present if union by first intention is desired.

29. Remember to dust iodoform over the line of sutures covered by iodoform gauze, cotton, tissue, and a rubber bandage.

30. Remember to use the fingers in anointing instruments instead of putting the instruments which are soiled into the ointment.

529 Locust Street.

EXCISION OF HEAD AND FOUR INCHES OF SHAFT OF HUMERUS, WITH CASE.[1]

By W. E. GUTHRIE, M.D.,

BLOOMINGTON, ILL.

It is not my purpose to enter into an historical discussion of resection of the upper end of the humerus, nor to describe the minutiæ of the operation except in so far as may be necessary to show the feasibility of the operation, and the possibility of procuring return of function in the injured member.

Reports of investigators prove that this resection is no more dangerous than amputation at the shoulder-joint, and, if successful, the result amply compensates for the increased trouble of the excision. If done for old dislocation of shoulder with anchylosis, or for disease of the head of the humerus where there is not extensive destruction of tissue, the periosteum can be saved, and thus much of the bone be restored. Experience, however, has generally shown that the best result to be expected in most cases is a loose flail-like joint. Gunshot wounds, which have been the most common cause for this operation, usually produce so much destruction of tissue as to make the salvation of periosteum a difficult matter. Especially is this true when the wound is inflicted by a shot gun at close range. The shot strike the bone, and then, scattering, carry destruction into the tissues around the joint. If the amount of bone excised be large, and a generous amount of periosteum be unsaved, the arm may be immobilized, using the body for a splint, and a flail joint expected, or the end of the humerus may be placed in the glenoid fossa, and anchylosis almost certainly awaited.

From all the reports of this operation which I have been able to collect and study, it appears that such a favorable result as I have had the good fortune to obtain in the case to be presented to you to day is remarkably rare.

October 22, 1893, James H——, eighteen years of age, was near Towanda, Ill, hunting squirrels with a shotgun loaded with small shot. Being somewhat wearied by his tramping he sat down on a rail fence to rest and refresh himself, placing the stock of his gun on the rail below and holding the barrel loose in his arms before him. By some means the butt of the gun slipped from its resting place and fell, striking the hammer on the rail and discharging the piece. The entire charge (shot, burnt powder, and wads), together with shreds of clothing, tore through the anterior border of the axillary space, severing in its course the pectoralis major, long head of the biceps, the anterior fibres of the deltoid, part of the short head of the biceps, the infraspinatus and teres minor muscles, crushing the head of the humerus and shattering the upper portion of its shaft, and destroying the insertion of the subscapularis and supraspinatus muscles. After shattering the bone the shot scattered in every direction through the enveloping muscles. The opening through the skin was at least an inch and a half in diameter, its margins ragged and bruised.

He was soon seen by Dr. W. H. Reedy, of Towanda, who picked out some pieces of bone, and had him removed to his home, about six miles away, and advised that I be called.

It was several hours after the accident when I reached his bedside. He had partially reacted from the shock;

[1] Read before the Illinois State Medical Society, May 16, 1894.

but as he had not sufficiently reacted for operation, and there was very little hemorrhage, and the lights at our disposal were poor, the wound was cleaned and temporarily dressed, awaiting the morrow for operative attention. Sunday morning, October 23d, assisted by Drs. Reedy and Anderson, the patient was anæsthetized with A.C.E., and the axillary artery being in good condition, resection of the head and upper four inches of the shaft of the humerus was done. The wound was enlarged upward to a point even with the top of the head of the humerus, and through this opening the pieces of bone were removed one by one, care being taken to strip the periosteum from each piece before removal, and a portion of bone was scraped off with each muscular insertion into the broken bone. The removal of the periosteum, tendon, and muscle was surprisingly easy by reason of the chisel-edged raspatory used. The fragments being removed, the point of the shaft was pushed up through the wound by an assistant and sawed off even with a chain-saw. The most time was consumed and the greatest difficulty encountered in cleaning out the shot, burnt powder, scraps of clothing, and dead muscular tissue. He had been under the anæsthetic two hours and a quarter before I was satisfied that I had made the wound as clean as possible. The cavity was then carefully washed out with a sublimate solution, and about two ounces of a ten per cent. solution of iodoform in ether poured into the depths of the wound, and the latter thoroughly packed with iodoform gauze.

Ordinarily I believe it good practice to raise the arm before dressing until the end of the severed humerus rests in the glenoid fossa. In this case I did not follow this course, fearing that the great destruction of tissue in the neighborhood of the joint would later infect the open end of the bone and cause suppuration and perhaps sepsis. So the axilla was thoroughly padded, the arm left at the side in a natural position, the forearm placed across the chest, and the whole immobilized by numerous strips of adhesive plaster. There was no subsequent hemorrhage, no pain, no elevation of temperature above one hundred degrees. Through the gauze there was a copious serous oozing. Two days later the gauze was removed without disturbing the arm, two drainage-tubes were inserted, one downward to the end of the humerus and one backward into the depths of the wound, and the portion of the opening made by my knife was closed by suture. As stated before, there was no pain and no inflammation. The only complication was vomiting and pyrosis for several days. Otherwise he made an uninterrupted recovery. Drainage by means of rubber tubes, and later silkworm gut, was kept up for several months, a stray shot coming away occasionally. For several weeks it has been entirely healed. It is now a little more than six months since the operation. As you see, there is no shortening of the arm. Nature has replaced the bone removed by another growth, the upper end of which you can feel rests in the glenoid fossa; the axilla is of full capacity. When I push upward on his elbow you see I raise the whole shoulder, thus proving the bone has been entirely restored. This young man is a farmer, and prides himself that he has "made a hand" on the farm this spring. He milks the cows with both hands, feeds himself with the left hand (the injured side), and, although the range of mobility of the arm is not large, it is gradually increasing with restored muscular power, and, all things considered, the result is very satisfactory. I show you also the portion of bone removed by me. I have had the pieces placed in their natural relation to each other and glued together. A portion of the head you see is missing, the portion, I suppose, that was removed at the scene of the accident.

As near as I can find, this case is unique on account of the amount of bone restored and the remarkable restoration of function in so short a time.

The Contagiousness of Tuberculosis is denied by Dr. Sprae, of Norristown, Pa.

Progress of Medical Science.

Care of the Mouth in Sick Persons.—Rosenbach says that in many illnesses there is almost sure to be secondary trouble in the mouth if preventive measures be not taken (*The British Medical Journal*). A warning sign is dryness and redness of the tongue and mucous membrane of the mouth, with difficulty in swallowing; further signs are an evil odor from the mouth, coated tongue and gums, bleeding of the gums, etc. Just as special care of the mouth is required in patients with carious teeth, smokers, and chewers of tobacco, so it is also in the case of unconscious or paralyzed persons; patients with fever or suffering from chronic digestive complaints; those taking medicines, such as mercury or iodides, or who, on account of general weakness, have to take strong alcoholic drinks; but, perhaps, the most important class of those in whom special care of the mouth must be taken are patients with fever. Parasites are always present in the mouth, but it is only when the tissues are weakened that they undergo invasion by these parasites, which become then really pathogenic. There is nothing which one can do for sick persons which is unimportant, and by neglect in the care of the mouth convalescence may be retarded. Rosenbach concludes with the following rules: (1) Patients with good digestive powers, free from fever, and with no loss of consciousness require no more than the ordinary care of the mouth. (2) In children and very old patients the less solid food taken the greater should be the care with the mouth. They should rinse the mouth out several times a day with lukewarm water containing a little common salt, tincture of myrrh, or eau de-Cologne added to stimulate secretion. When there is a tendency to bleeding of the gums, or when the teeth are bad, a pinch of powdered boric acid may be twice daily rubbed in between the lips and gums. Patients with false teeth should remove their false teeth when, owing to loss of appetite or chronic gastric disturbance, they cannot take solid food. (3) In patients with partial loss of consciousness the mouth should be examined several times a day for small sores, such as may arise from the pressure of the teeth on the lips, etc. Such sores should be powdered with a little boric acid or chlorate of potash, and the cracks at the corners of the lips heal quickly if dried with a clean towel and treated with boric acid or vaseline. The mucous membrane may be stimulated by wiping the tongue and mouth, and pressing on the tongue with a moist towel every two or three hours; if necessary, the hinder part of the tongue should be cleaned with a wad of cotton-wool fastened to a stem. If the patient sleep with the mouth open the air in the room must be kept moist; a moistened layer of muslin laid on the mouth may be of some service. (4) Patients with fever should have something to drink—cold water or weak lemonade—at least every hour; one must not wait until the patient asks for drink. Besides preventing dryness, the fluid maintains the activity of the glands and the whole function of the mucous membrane. Many patients are prevented from drinking by a painful, dry, and cracked condition of the lips, and therefore all feverish patients should, from the commencement of their illness, have their lips rubbed several times a day with vaseline or fat. In protracted cases of fever the mouth may also be swabbed out with oil, fat, or greatly diluted glycerine.

Total Abstainers in the Indian Army.—The Army Temperance Society of the British army in India has grown from 13,000 members in 1890 to over 22,000 members to-day. Out of 1,100 regimental courts-martial for 1893, only 39 sat to try members of the Temperance Association, and of 2,680 courts-martial of all classes for that year, only 73 concerned temperance men.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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AS OTHERS SEE US.

LAST year medical men and matters on this side of the Atlantic were observed and freely commented upon by that veteran medical journalist, Mr. Ernest Hart. We have again been subjected to observation and comment by one of our transatlantic brethren—a German. A book recently published by Dr. Placzek,[1] a Berlin neurologist and litterateur, pictures the medical profession in this country with the pen of a discriminating observer. The surprise and pleasure which the revelations of his journey produced upon the author are quite naïvely told. A few extracts from the work may enable us to "see ourselves as others see us."

In his introduction, the author expresses surprise and admiration of the spirit which pervades our eleemosynary institutions. "The European physician, whose vision is narrowed by the diminutive size of his own country, does not conceive that beyond the wild-heaving Atlantic there lies the land of promise, *par excellence*, a land of immeasurable resources, in which the talents of the individual may hew out a career unimpeded by European class distinction." The author believes that the pilgrimages now made to Europe by our physicians will cease; that schools will ere long be created whose disciples, as "thoroughly educated as their European colleagues, will reach out toward the goal of knowledge with the same zeal, the same ability, and the same thoroughness." With the penetration of a skilled observer, Dr. Placzek, in describing our hospital system, emphasizes the fact that we do not rely upon the state for aid as they do in Germany, but "the cruel help yourself," which rules in all branches, permeates also, strange as it may seem, all purely humane efforts." Nor is he slow to recognize that, "while our institutions built and maintained by the state are often sadly defective, most of those initiated by private enterprise are models of astonishing completeness." He acknowledges that the European errs in regarding the American as a "dollar hunter" devoid of all sentiment, citing as evidence the fact that a vast stream of money flows constantly into the coffers of our hospitals, much of which is given "in memory of a wife, son, or daughter," as recorded pathetically on tablets over some of the beds. The shadowy side of the picture is brought out in his reference to the fact that, despite their great wealth, these corporations accept the services of medical men without compensation, and that the lay directors entirely control the affairs of the hospital. He especially condemns the authority of the superintendent, which he erroneously regards as supreme in all our hospitals. The comfort and elegance of our hospitals are brought into striking contrast with those of Germany, and this is emphasized by well executed illustrations. Our ambulance system and our training-schools for nursing elicit the author's highest encomiums, and are held up as examples worthy of imitation. He is struck by the extravagance in the arrangement of our dispensaries (which he calls the children of sorrow of medical practice); he justly condemns the reckless disregard of the interests of the profession displayed in their administration. Under the caption of "Therapeutic Tendencies," the author alludes to the contrast between German therapeutic nihilism and the implicit faith in drugs of the average American, which he attributes to imperfect education. He assigns the latter as a cause of the glaring disregard of the newer therapeutic methods, citing rational hydrotherapy as an example. "The process of development through which this therapeutic method is passing, in order to conquer the position to which it is entitled, will always be noteworthy in the history of American medicine. To the zeal of a New York physician, who is conducting the battle for the introduction of this powerful agent with unflagging industry, the credit will be due if the opposition to this method, which has long ago attained recognition in Europe, shall be overcome." He finds electro-diagnosis and therapeutics as little "the general property of the profession here as it is in Europe, and he regrets to note that massage is entirely in the hands of laymen." Our insane asylums receive extensive notice, and many illustrations are furnished to emphasize their elegance and comfort. Our quarantine system is regarded as too exacting; its excessive demands being illustrated by the detention of the Normannia last summer. "The American's fear of contagion is well known; he expects protection from the quarantine officer;" thus Dr. Jenkins's rigorous measures are condoned, the European idea of the American doctor, that he is a sort of inferior being, a practical merchant, is regarded as a great error by the author. "Reality develops quite a different picture," says he. "In vain do we look over there for the large and showy signs announcing the doctor to be "a practical physician, surgeon, and accoucheur, or specialist for larynx, throat, or nose." Not even the well-known "free to the poor" is found anywhere. Nothing of all this, only a small sign in the inside of a window stating the doctor's name and office hours." An extract from the Code of Ethics concludes this interesting chapter, with the statement that our "codex of morals is far more strict than that customary in Germany."

Our educational facilities are fairly well presented, they are concluded with a just criticism upon the following defects: 1. Imperfect preparatory education. 2. Excessive theoretical instruction. 3. Insufficient clinical teaching. 4. Insufficient practical activity. 5. Brevity of course of study.

Our sanitary and hygienic affairs are largely, and upon the whole favorably, commented upon.

Taking the book as a whole, we have reason to be proud of the impression made upon a representative German colleague, whose clearness of perception is equalled by the fairness of his criticisms.

[1] Die Medicinische Wissenschaft in den Vereinigten Staaten. Reisestudien von Dr. med. S. Placzek, Nervenarzt in Berlin. Leipzig: Georg Thieme. 1894.

SOME EXPERIENCES OF THE DOCTOR'S WIFE.

The doctor's wife has had many kind and sympathetic things said about herself and her lot. A whole book has even been written regarding her trials, her duties, and her pleasures. The theme is a fertile one; and a Brooklyn doctor's wife has recently and happily enriched it through the columns of the New York *Times*. Some of her comments will no doubt wake responsive notes in the minds of the many doctors' wives who read the Medical Record.

"The apologies of the people who do not employ my husband as a physician," says the Brooklyn lady, "are the funniest things yet. It is an extremely delicate thing to receive these apologies in a delicate manner. You really do not know what to do. I think sometimes a doctor's wife who says just the right thing must be inspired. You have to say the very best things you can for the physicians they employ. This is a big world and a hard world, and it is always best to say all the good you can about every one. People are apt to ask your advice, too, about which you consider the best, the regular or the homœopathic school of medicine, but although they ask the question they are very likely to feel terribly grieved if you say anything against either school."

It is a standing grievance with some wives that they have to be called "Mrs. Doctor."

"How many times," she says, "I hear that expression. People do not seem to realize that you got the 'Mrs.' alone and not by degrees, but by just a few words. The certificate one gets at that time has nothing to do with degrees or 'Mrs. Doctor.' I suppose it is because of 'Mrs. Doctor' that there is hardly anything I have not been asked to do when the doctor was out, from setting a broken arm to pulling a tooth. And the people will not see why I cannot do it.

"One man wanted a prescription. He said he knew exactly how the signs looked on paper, if I would only make them. The druggist would not give him the medicine without the paper. Another man could give an exact description of the bottle some medicine was taken from if I would only get it for him."

The Brooklyn doctor's wife would evidently be glad to join the "Society for the Abolition of the Doctor's Title," for she says:

"The life in a house behind a brass sign seems to me different from other lives. There you are ticketed. When you stand in the window you are not a private woman in a private house. You are Mrs. Doctor So-and-So to every one who happens to look your way.

"You are never sure of an evening, and you may sit waiting with gloves on until long past calling time, and the doctor won't come after all. To be a doctor's wife means to go to dinner-parties alone, with your escort arriving perhaps with the second or third course. It is a dual life, with the doctor's wife spreading herself like thin varnish over it all. Then, and it is not the least of all, the doctor's wife has to look after the family carving."

From all of which we should infer that if a young woman were to take any advice about marrying a doctor it should be *Punch's* general admonition: "Don't." Fortunately advice is not asked as to matrimony by the woman of to-day.

News of the Week.

Free Alcohol.—The result of the unintentional placing by the new tariff bill of alcohol used in the arts on the free list will, it is said, reduce the price of tinctures, perfumery, and spirit varnish from fifty to sixty per cent.

Milk from Tuberculous Cows.—In a recently issued Agricultural Department report, on tuberculosis in cattle, by Theobald Smith, chief of the animal pathology department, it is stated that investigations undertaken by the department show that the milk of tuberculous animals is not so infrequently infected as supposed. Milk of animals in the earliest stages of the disease and with perfect udders, does not contain tubercle bacilli. Only those showing signs of labored breath and emaciation should be gravely suspected, and their milk excluded at once from sale.

A Statue to Claude Bernard will be unveiled at Lyons on October 26th. The French Academy has appointed MM. J. Bertrand and Brunetière to represent it on the occasion. The Académie des Sciences will be represented by MM. Chauveau and Bouchard. As the first French Congress of Internal Medicine will be in session in Lyons at the time, it is expected that the ceremony will be exceptionally brilliant.

The American Academy of Medicine.—At the annual meeting of the American Academy of Medicine, held at Jefferson, N. H., the following officers were elected: *President*, J. McFadden Gaston, M.D., of Atlanta; *Vice-Presidents*, Rufus P. Lincoln, M.D., of New York; William T. Smith, M.D., of Hanover; Helen C. Putnam, M.D., of Providence; Victor C. Vaughan, M.D., of Ann Arbor; *Secretary and Treasurer*, Charles McIntyre, M.D., of Easton, Pa.; *Assistant Secretary*, Edgar M. Green, M.D., of Easton, Pa.; *Member of Council*, Charles C. Bombaugh, M.D., of Baltimore. The next meeting will be held in Baltimore, May 4, 1895.

Deaths from Chloroform.—From August 10th to September 1st, there were three deaths from chloroform anæsthesia in London hospitals.

A New Pulmonary Disease—"Pulmonea."—Dr. J. W. Power, of Caylloma, Peru, says in *The Lancet* that pulmonea is a name given by the native Peruvian miners to an affection of the chest simulating acute pneumonia in the consolidation stage, and might easily be mistaken for it. In these altitudes (15,600 feet) the sudden daily extremes of temperature (75° to 38° F. average) natural to the climate, and the inhalation of the irritating dust of the dry stamps of the mills and smelting fumes, make cases of pulmonea of daily occurrence. Miners with pulmonea will present themselves complaining of inability to work, of a dull pain under the heart and between the shoulders, of cough and sometimes blood spitting, and distress of breathing. Inspection of the chest shows increased and quickened breathing. There is increased vocal fremitus, with marked dulness on percussion, and increased resonance over both lungs at the back of the chest—under, as it were, the seat of pain. Sometimes roughened breathing can be heard, but not tubular. However, there are no febrile symptoms, and the absence of these and the tubular breathing are the only differences between the two affections. I have made ne-

cropsie of two men whom I had previously treated for pulmonea, who had died from the effects of mining accidents, and in both cases I found the glands in the posterior mediastinum greatly enlarged, inflamed, and thickened, forming a compact mass in a situation which would just correspond to the seat of pain, and I have no doubt that these glands were the cause of the symptoms and physical signs which I have described. Their condition was probably caused by the irritating matter continually inhaled by the men. With regard to treatment, painting the back with iodine, and syrup of the iodide of iron given internally, with a few days in the fresh air, will remove all the unpleasant symptoms, but not the physical signs.

A New Gas.—The various medical societies, academies, sections, etc., which are about to begin the fall and winter season will be interested in learning that Lord Raleigh has discovered a new kind of gas, resembling nitrogen.

Pasteur's Vaccination.—The authorities of Lower Austria have decided that a station for vaccinating against rabies shall be established in the neighborhood of Vienna.

St. Louis has an Electric Ambulance.—The St. Louis authorities have adopted a plan of conveying patients from the Dispensary to the city hospital by means of an electric railway ambulance. A street car, with electric motor attachments, has been fitted up as an ambulance, and the system has been successfully put to work. It is intended to run the car to all parts of the city in response to ambulance calls. The car will be permitted to make an average speed of twelve miles an hour.

The Tri-State Medical Society, with membership from Illinois, Iowa, and Missouri, will meet in Jacksonville, Ill., October 2 and 3, 1894. Valuable papers are promised from leading members of the profession of Chicago, St. Louis, Kansas City, Indianapolis, Keokuk, Springfield and other places. A large and profitable meeting is anticipated.

The Cholera.—The epidemic in Russia has assumed large proportions again during the past week, or else, as is very probable, the invasion of new districts for several weeks past was kept secret by the authorities until the number of cases became so great that further concealment was impossible. During the week ending September 8th, 6,376 new cases and 3,192 deaths were reported in Russia proper, and the weekly average of new cases in Russian Poland is 5,000, with a mortality of about fifty per cent. The disease is very prevalent in Nijni-Novgorod, where the annual fair is now being held. In Galicia and Bukowina, during the three days ending September 9th, there were 533 new cases and 304 deaths. Since the beginning of the epidemic there have been 6,958 cases of cholera and over 3,000 deaths in these provinces. The weekly average of new cases reported in Germany is about 50. It is believed that the Rhine is infected, as cases have occurred on the Rhine steamers. The disease is undoubtedly epidemic in Marseilles, although the authorities persist in their denials that cholera is present there. Most of the Mediterranean ports have established quarantine against that city. Other towns in France in which one or more cases of the disease have occurred are Paris, Bordeaux, Lassay, Rheims, Reuil, and Mancel-sur-Scille. An increase in the number of cases is also reported from Belgium, eleven deaths having occurred in Liége on September 5th, and new cases are constantly being discovered in towns on the Meuse and Sambre rivers, and also in places along the Maas, which is the continuation of the Meuse in Holland. A Bavarian immigrant died in Cumberland, Md., a few days ago with symptoms pointing to cholera, but an investigation by the Marine Hospital authorities has shown that the case was not one of Asiatic cholera.

Failure of Haffkine's Inoculations.—A dispatch to the London *Times* from Calcutta, dated September 11th, says that during the recent cholera epidemic at Lucknow several soldiers who were inoculated with Dr. Haffkine's virus were attacked, and that the proportion of mortality among them was the same as among ordinary patients. This contradicts the results of the experiments conducted by Drs. Hafikine and Simpson, in Calcutta last June. It was then said that few, if any, of those inoculated were attacked by the disease, or if attacked they promptly recovered.

Dr. William C. Dabney died recently from typhoid fever in Charlottesville, Va. He was graduated from the Medical Department of the University of Virginia in 1868, and at the time of his death was professor of obstetrics and the practice of medicine in that institution.

The International Congress of Hygiene and Dermography, which closed its session in Budapest, on Saturday last, will hold its next meeting in Madrid.

Hong Kong is officially declared to be free from the plague, and the port was opened to commerce on September 10th.

Yellow Fever.—The steamer Samuel Tyzak, which arrived in Baltimore from Havana on August 31st, had four cases of yellow fever on board. One of the men died in the Maryland University Hospital, and another occupied a bed in one of the wards before the nature of his disease was discovered. The bark Alice, also from Havana, is at quarantine at Cape Henry, with three cases of the same disease.

Dr. Noah Sanborn died in Bayonne, on September 6th. He was born in Tamworth, N. H., in 1837, but had been a resident of Bayonne for twenty-two years. He served throughout the Civil War as a surgeon in the Northern Army, and at the time of his death was one of the attending staff of the Bayonne City Hospital.

Signor Crispi, Prime Minister of Italy, is reported to be suffering from a cataract.

The Craig Epileptic Colony.—It is probable, as we learn from authentic sources, that the epileptic colony will not be opened for actual work under two or three years. There is perhaps already some trouble about patronage.

Dr. George Thomas Jackson, of this city, has been appointed foreign Secretary for the United States of the Third International Congress of Dermatology to be held in London, July 31 to August 4, 1895.

Hog Cholera is epidemic in Lyons County, Kan. Over four thousand hogs are said to have already died from the disease, and many breeders have lost their entire stock.

Dr. Charles H. Williamson died on Monday, September 10th, at St. John's Hospital, in Brooklyn, in his sixty-eighth year. He was born in Virginia, and served as a medical officer in the United States Navy for some years preceding the breaking out of the rebellion, when he joined the Confederacy. At the close of the Civil War he served as surgeon in the Pacific Mail Steamship Company.

The Cause of Liverpool's High Death-rate.—Some remarks having been made about the high rate of mortality in Liverpool, the medical officer of health in that city has prepared an explanatory statement, in which he attributes the apparent unhealthiness of the town to the density of the population, there being no rural or semi-rural districts within the municipal area, as there are in other places. While in Liverpool there are 114 houses to the acre, there are only 39.9 in Manchester, 38 in Birmingham, and so on to Huddersfield, which has only 8 to the acre. The death-rate in Liverpool is 23 per 1,000, and in Manchester only 18.2; but taking the township district of Manchester, which, to a certain extent, corresponds to Liverpool, the death rate there is 27 per 1,000, which is greater than that of Liverpool. Turning to London, which, he says, is a very difficult place to say anything about, the average death-rate is 21.3, but in what may be called the urban district of London the rate is 26. The death-rate in Liverpool during the last six months was materially below the average of the last ten years.

English as a Universal Language.—At the session of the American Social Science Association in Saratoga on September 4th, Mr. D. G. Porter, of Waterbury, Conn., read a paper on "English as a Universal Language." He said that in the present century there had been a demand for a universal language. French and the so-called Volapuk had been advocated, and there had been a demand for the revival of the Latin tongue; but the English, the youngest of all the great tongues, seems to be the survivor in the struggle for the supremacy. It was largely owing to the fact, he said, that it was the language which grew from the necessities of the common people, without regard to the rules of orthography or grammar. He traced the formation of the English language from the beginning of the fourteenth century, when the Norman-French that had been forced on Great Britain as the language of its court and legal tribunals was forced to compromise with the Saxon-Danish, which was spoken by the peasantry, so that all classes of people could converse and comprehend each other, and from the necessities that urged that compromise has grown that which requires that the spoken English should be the universal tongue, for of its energy, begotten by the compounding of races, grew the commercial supremacy of England and her colonies, that had encircled the world and carried with it the English speech, until now commerce requires it, and it is even supplanting French as the tongue of diplomacy.

Mr. Porter is evidently not a reader of the MEDICAL RECORD, otherwise he would have had something to say concerning the powerful claims of modern Greek to general acceptance as the universal language of science. Of course, if we believed English had any chance of being adopted as the international means of communication, we should gladly urge its claims; but we fear there is little hope of this. It is commonly said that our tongue is understood and spoken by all educated men in Europe, but anyone who has attended an International Medical Congress on the continent knows how little truth there is in this assertion. Of the three official languages, English is the only one that is tortured beyond all recognition by the official translators, and of all the orators at the general and section meetings, those speaking in English have the smallest and the least attentive audiences.

Obituary.

PROFESSOR HERMANN LUDWIG FERDINAND VON HELMHOLTZ.

BERLIN, GERMANY.

PROFESSOR HELMHOLTZ, the celebrated physicist, died of apoplexy in Berlin on Saturday, September 8th. He was born in Potsdam in 1821, and was educated as a physician, serving his term in the Charité Hospital. He turned his attention almost immediately to the physical sciences, and published his first book on "The Conservatism of Force" when twenty-six years old. The following year he was called to the chair of anatomy in Berlin, and the year after that became Professor of Physiology at Königsberg. Subsequently he filled the same chair at Bonn (1855) and at Heidelberg (1865), and in 1871 was called to the professorship of physical science in Berlin, formerly held by Gustavus Magnus. It was during his stay in Königsberg that he invented the ophthalmoscope and the ophthalmometer. He wrote about one hundred and fifty scientific papers and contributed largely to the physiology of vision and hearing. Among his published works of physiological interest were: "The Nerves of the Invertebrata;" "Heat Generated by Muscular Action;" "Measurements Affecting the Periodical Contractions of Muscles and the Distribution of the Nerves Contained in Them;" "A Method of Measuring Small Intervals of Muscular Action;" a "Manual of Physiological Operations."

He published on optics, "A Sketch of the Construction of the Living Eye," in 1851; "The Theory of Permanent Colors," in 1852; "The Sight of Man," in 1855; and the "Manual of Physiological Optics," in 1856. In 1862 he published his "Theory of the Impressions of Sound," and a little later a work which attracted wide-spread attention, entitled "Sensations of Tone as a Physiological Basis for the Theory of Music."

He loved science for its own sake and looked for his reward in the pleasure occasioned by the search for knowledge rather than in that caused by the possession of knowledge itself. He developed this thought and showed the spirit which had animated his life work in the course of an oration which he pronounced on Gustavus Magnus, his predecessor in the chair of physical science in Berlin. "Knowledge alone," he said, "is not the design and object of men on earth. Although science awakens and cultivates the most subtle forces of the human mind, yet he who studies only to know will not find the true object of his existence in this world. . . . A thorough knowledge of the operation of the natural and mental forces is all that scientists can attempt to acquire. The student must feel himself rewarded by the pleasure found in hailing new discoveries, new victories of human effort and human thought, over opposing material forces. He can find pleasure in the beauty which a well arranged department of knowledge exhibits, in the coherence of relation between its different parts, perceiving how one part grows out of, or is developed by, others, and he must find high enjoyment in the consciousness of having contributed to the growing chapter of general information, in thus assisting to manifest the supremacy of man over the forces and material of nature."

Clinical Department.

LARGE DOSE OF SULPHONAL FOR A CHILD.

By J. SUTCLIFFE HILL, M.D.,

BELLOWS FALLS, VT.

BELIEVING that the presentation of facts as a result of our observation in cases that come under our care is of interest to our professional brethren, and serve as lessons for our guidance in similar cases in future, is my only reason for presenting the following:

On February 24th, at 7 P.M., I was hastily summoned to the bedside of a child, aged eighteen months. I found an eclectic physician (?) present and learned that the child was taken sick on the Tuesday preceding with some form of bowel trouble.

Status præsens: Child apparently unconscious, pupils contracted, breathing shallow, but regular, pulse 120. On questioning the eclectic he informed me that at 9 A.M. he had given 8 grains of sulphonal, and at 11 A.M. 8 grains more, at 1 P.M. 8 grains more, and between 3 and 4 P.M. 10 grains, making in all 34 grains in a little over six hours. As the child was breathing regularly and the pulse was good I deemed it a good case to wait and watch the effect of suphonal in large doses and so stayed with the patient all night.

The parents had promised me full control of the case before I saw the patient. The child slept profoundly over six hours, and as the parents had become quite anxious for their little one, I managed to rouse the baby and gave a few drops of aromatic spirits of ammonia; the child again fell into deep sleep and slept four hours, when I repeated the ammonia. This continued for over twenty-four hours, when the child could be more easily roused and called for nourishment. During this time there had been difficulty in making water. There was one peculiarity that was very apparent when the child was recovering from the effect of the sulphonal, viz., ptosis of both eyes, which continued for four days, and was very marked.

The case ended in complete recovery, no trouble either of stomach or bowels. To me it was a very interesting case as I have never prescribed over 10 grains of sulphonal at one dose in adult cases.

A CASE OF CHOLECYSTENTEROSTOMY WITH THE AID OF THE MURPHY BUTTON—RECOVERY.

By HENRY MOFFAT, M.D.,

ATTENDING SURGEON, ST. JOSEPH'S HOSPITAL, YONKERS, N. Y.

THE following case seems to me to present some features of interest, and I trust will not be inappropriate, now that so much attention is being paid to the surgery of the gall-bladder.

L. S——, a widow, aged thirty nine, a German domestic, was admitted first to the surgical ward of St. Joseph's Hospital on November 19, 1893, suffering from intense biliary colic with a marked distention of the gall-bladder. She was on the verge of collapse, and cholecystotomy was immediately performed by my colleague, Dr. G. N. Banker, who was on duty at that time. He removed eight large and six small stones. The patient made an uninterrupted recovery and was discharged, December 23d, with a biliary fistula, which persisted for about ten days longer, and finally closed spontaneously. She had one slight attack of colic during January, which was easily relieved, and remained well till February 5th, when she was again seized with most violent pain in the same region as before—the tumor reappeared and rapidly increased in size. She was immediately brought back to the hospital and came under my care.

On admission she was again in a partially collapsed condition, slightly jaundiced, vomiting, and suffering intensely, with a rapid and feeble pulse but no elevation of temperature. The gall-bladder, swollen to the size of a large orange, could be easily made out below and to the mesial side of the former incision. In view of her previous history, and believing that it would be extremely difficult to assure myself of the freedom of the common duct in a secondary operation, I determined to perform cholecystenterostomy, using one of Murphy's anastomosis buttons. In this view my colleagues, Drs. Banker, Benedict, and Pyne concurred. The patient was therefore immediately etherized and an incision, about four inches long, was made three-fourths of an inch to the left of the old scar, parallel to and about two inches from the median line, extending from one inch below the free border of the ribs almost to the level of the umbilicus. The thickened and adherent peritoneum was carefully incised and the distended gall-bladder was immediately disclosed, though it was so bound down and covered by old and strong adhesions that only about one square inch of its surface could be cleared for manipulation. The aspirator was used, and about two ounces of slightly bile-tinged serous fluid was drawn out. The presence of a stone could not be detected, but, feeling perfectly assured that the common duct was obstructed, I proceeded with the operation. The only loop of intestine which could be approximated with any degree of safety was the hepatic flexure of the colon. I attempted to drag one or two loops of the ileum to the point, but found that strong adhesive bands prevented, and had I succeeded, would undoubtedly have produced dangerous and probably fatal constriction of the bowel. The male button was therefore placed in the colon in the manner described by Dr. Murphy, and the female button in the gall-bladder. This latter procedure was attended with considerable difficulty, for the following reasons:

1. The adhesions from the previous operations had bound the gall-bladder firmly down at the bottom of the wound.

2. The surface freed from adhesion was so limited that it was found impossible to make the two stitches described by Dr. Murphy on one side of the incision; one, however, proved just as satisfactory in this case.

3. The walls of the gall-bladder were more than one-fourth of an inch in thickness, rendering it difficult to make them slip into the cup of the button when the ligature was pulled taut. The buttons, being then safely in place, were pushed home and a satisfactory approximation of the parts was made without any undue tension on the surrounding tissues. As there had been some unavoidable leakage from the gall bladder, I packed down to the bottom of the cavity a strip of iodoform gauze and closed the rest of the wound with sutures through the abdominal wall and peritoneum.

The patient made an uninterrupted recovery. Her bowels were readily moved on the third day by a dose of magnesium citrate, and on the seventh day a gall-stone about the size of a hickory-nut was passed per rectum. She was allowed to sit up on the eleventh day, and discharged at her own request on the eighteenth day after the operation. The abdominal wound was entirely healed, with the exception of a small superficial granulating surface, which soon cicatrized over; but she had not passed the button. Dr. Banker saw her several times after she left the hospital, and anxiously awaited the appearance of the button. It was not until March 2d, twenty-five days after the operation, that it was finally passed. She was at that time seized with colicky pains over the whole abdominal region, and a dose of castor-oil produced the long-expected button. She has since been in perfect health and attending to her duties.

In reviewing the case the following points might be noted: 1. The comparatively easy accomplishment, with the aid of Murphy's button, of an operation which is acknowledged by all surgeons to be one of the most difficult. To effect a perfect anastomosis between a loop of intestine and a gall-bladder with thickened walls, and bound firmly down in such an inaccessible position, without the aid of any mechanical contrivance, would call for

the highest technical skill and would be attended with the gravest difficulties. From my experience in this case I feel certain that the Murphy button has proved a most valuable assistant.

2. It must, however, be noted that the danger of the button becoming lodged somewhere in the intestinal tract, is not by any means as trivial as Dr. Murphy wished us to understand. In the above case, from the fact that a gall-stone was passed on the seventh day, it must be inferred that the button had at least partially sloughed away; for the stone was too large to pass through the lumen of the button. And yet, in spite of the fact that the colon was used, it took twenty-five days for the button to pass out of the body. There was, however, no obstruction at any time, and the bowels moved every day.

3. The use of the colon, while not desirable, was absolutely required in this case for the reasons given above, and is not without precedent. Treves quotes a case of Mr. Mayo Robson in which the hepatic flexure of the colon was used for the same reason.

4. The effect of the loss of the physiological action of the bile in the small intestine will be worthy of further observation. At present writing, two months after the operation, the patient is in perfect health, has gained in flesh and strength, and her bowels are acting in a perfectly healthy manner.

A SUCCESSFUL PLASTIC OPERATION OF THE FACE.

By J. J. MULLEN, M.D.,

PITTSBURG, PA.

On December 10, 1893, assisted by Drs. H. Atkinson, of Connellsville, Pa., and J. D. Mullen, of Dunbar, Pa., where the operation took place, I performed a plastic operation on the face of a girl, aged twelve, who had her right eye and cheek entirely destroyed by the accidental discharge of a loaded gun in the hands of her brother. She presented a most pitiable appearance; the lower eyelid was firmly adherent in the cicatrix on the face at right angles to its former or normal position. The cicatrix resulting from loss of skin, fascia, muscles, and bones was permeated with powder and lead, extending from the orbital space along the nose down, and included the upper lip, running obliquely over the lower jaw up along the face close to the ear to the outer commissure of the eye. After satisfying myself that the stump remaining from loss of the eye had cicatrized perfectly and no irregular nodule remained, I dissected the lower eyelid out of the scar and threw it over the patient's nose in a pair of catch forceps. I now made a free and clear dissection of the scar from the points described, with the exception of a small portion along the nose and close to the eye, which subsequently answered a good purpose. The dissection of the scar was not attended by much bleeding, although I used a very sharp scalpel. The dissection being completed (which was the least difficult part), an incision from the margin of the dissected wound on the lower jaw, on the ear side of the wound, down on the neck, three inches or more in length and one and a half inch in width, its distal end being freed and the proximal at a point immediately below the ear, turned at right angles, was brought up to within one half-inch of the eye, where it was sutured to a small margin of sound skin. The other flap was secured by going down on the chin and neck, leaving, however, a portion of sound and undisturbed skin, which divided the space from which the flaps were removed; it was also turned at right angles on the lower jaw and its free end secured to the small piece of cicatricial tissue I left on the nose at the time of dissection. Both flaps were now sutured, one along the side of the nose, and the other to a slight margin of sound skin along the ear. The two free edges now in the middle of the wound were united with catgut sutures. A V-shaped opening was made at the outer commissure of the eye into sound skin and the eyelid was brought into it and secured by a suture, which was passed from above downward into the wound and there tied. The denuded surface on the neck was covered by freeing the skin and fascia on both sides and suturing them to the island of undisturbed skin which was left when the flaps were removed. The wound being thoroughly dried was dressed with boracic acid, and the dressing being secured in the usual way the patient was placed in bed, where she remained for eight days. Many of the sutures were absorbed on the sixth day, the whole of them were removed two days later, and complete union had taken place in the wound. The dressing was scarcely soiled during the healing process. The result was very gratifying to all concerned.

A LARGE DOSE OF MORPHINE.

By W. S. GROOM, M.D.,

BRITT, IA.

September 22, 1893, I was called out of bed to go into the country to see Mrs. P——. I found her in great distress and unable to describe her symptoms very accurately. So thinking to relieve her distress and make my diagnosis afterward, I gave a hypodermic of ¼ grain of morphia, which I repeated in ten minutes, as there was not the slightest result. In twenty minutes I prepared the third dose, but I naturally hesitated in giving it. I asked her if she ever took any opiate? She said, "Yes." "How often?" I asked. "Every day." "How much?" "Thirty grains." Well that staggered me, but after careful investigation I found it to be correct. She showed me an ounce bottle of P. & W. label, said that she took that much every sixteen days. She showed me a ½-ounce bottle that she had opened in the morning, and prepared her morning dose, but she was unable to retain it. I prepared a solution of fifteen grains morphia in very hot water, and gave it hypodermically. It filled my hypodermic five or six times. The result was magical. One ounce P. & W. morphia every sixteen days beats the record of any case I ever heard of.

FRACTURE OF THE HEAD OF THE FIBULA BY MUSCULAR ACTION.

By D. B. HORTON, M.D.,

BATAVIA, N. Y.

The only excuse in offering a report of this case is its extreme rarity in practice, and the peculiar scientific interest connected with such an accident. I was called to see E. E——, aged sixty-four, on the morning of January 29, 1889, and as I entered his room he stated that he had broken his leg. I asked how he knew it was broken, and he replied, "Because I felt it and heard it snap, and cannot walk upon it." I readily diagnosed a fracture of the head of the fibula of the right leg, three-fourths inch from the upper extremity of the bone. The fragments were separated one-half inch, but could be easily brought together and crepitus obtained. As he said that nothing struck his leg and there was no abrasion of the skin, my curiosity was excited, and I drew out the following history of the case: While coming home the night before, walking over a bad sidewalk, his right foot caught in a hole in the walk, causing him to stumble six or eight feet, and finally fall off the side next to the fence. On attempting to rise he found his leg useless, and he crawled along, and by the aid of a piece of board finally reached home, fifteen or twenty rods distant. It seems that while falling, and just at that particular time when the knee was twisted outward, leg slightly adducted and slightly flexed upon the thigh, and the foot on the walk, and he, still in an upright position and making a desperate effort to save himself from falling, heard a snap like a bone breaking, and his leg gave way. After a careful study of these parts it will be plainly seen that this position is the only one in which this accident could take place without traumatism. The

head of the fibula is so protected by the external tuberosity of the tibia that only by the leg being bent upon the thigh is it in a measure exposed, and then by a violent contraction of the biceps the bone gives way at its weakest part. I found by flexing the leg upon the thigh to about forty degrees that the parts were easily retained. I applied a compress and bandage for a few days, and then a plaster-of-Paris bandage for four weeks, holding it in this flexed position, obtaining bony union and good result.

TREATMENT OF CEREBRO-SPINAL MENINGITIS.

By T. J. HUTTON, M.D.,

SHENANDOAH, PA.

THE uniformly successful results of the following plan of treatment for this malady has been one of the chief joys of my professional life.

The intense cerebral form is usually attended with constipation that is almost obstipation: here open the bowels with calomel or turpentine enemata. The mild constipation met with in some cases of the cerebro-spinal form of malady is easily controlled by mild laxatives—phosphate of soda in tepid milk, or simple warm-water enemata. I write now of the cerebro spinal form, and the essence of the treatment is: Put the patient into a mild dozy condition by small doses of bromide of potassa and opium, graduated to the age of the patient and repeated often enough to maintain the dozy condition. Draw a good blister over lower dorsal spine by cantharidal plaster sized to suit the age. Keep hot flat irons or bottles filled with hot water to the patient's feet. Feed the patient every hour or two with an ounce or few ounces (according to age) of warm milk and eggnog alternated with beef-juice—not beef-water. A suitable doze formula for a patient aged ten or twelve years would be about as follows:

℞. Potass. bromid. ..... 3 jss.
Sol. opii comp. (Squibb's). ..... 3 jss.
Syr. zingib.,
Aq. caryophy.,
Aq. pur. .....āā q.s. ft. ʒ iv.
M. S.: A teaspoonful every two or three hours by day; less often by night.

A suitable eggnog formula is as follows:

℞. Granulated sugar..... 1 tablespoonful.
Pure rye whiskey ..... 1 tablespoonful.
Fresh milk ..... ½ tumblerful.
A fresh egg well beaten up.
Hot water enough to fill a common-sized tumbler.

What will this treatment do? One thing it will not do—it will not enrich undertakers. I have practised since 1871; have in that time treated quite a few cases of this malady; have had no death to date.

A CASE OF ENTEROLITH.

By W. C. PHELPS, M.D.,

BUFFALO, N. Y.

I FIRST saw the patient three years ago, when she was suffering from a severe pain in the abdomen on the right side. There were some induration at the seat of pain, but it soon passed away and no operative procedures were attempted, though an exploratory incision was thought of. After this attack she was in good health excepting a pain, of a neuralgic character, in her left arm, which was almost always present. She was in her usual health until June 21st, when she was taken with a severe colicky pain. I was called to see her, and relieved her with a hypodermic injection of morphine. She was able to ride out that day in the evening and thought that she had entirely recovered. On the morning of the following day, however, she was again attacked, and began to pass bloody mucus from her bowels. Thinking that a dysentery was being developed I ordered one and one-half ounce of castor-oil. In three hours she had a movement of the bowels, and a large stone, weighing over half an ounce, was passed, with immediate relief to all her symptoms, including the pain in the arm, which had been very severe during the continuance of the pain in the abdomen. I think that this stone was impacted in the small intestine, and was the cause of the patient's illness three years ago, and that it passed into the large intestine at the time of her recovery, and had since been lodged in that portion of the alimentary canal until it was finally expelled by the dose of castor-oil. Authors state that it is always a matter of years during which enteroliths are forming, even as long as thirty years—generally not less than six.

A CASE OF PSEUDO-RABIES COMPLICATED BY DELIRIUM TREMENS.

By J. D. GRISSIM, M.D.,

HOUSE PHYSICIAN TO ST. JOSEPH'S HOSPITAL, PATERSON, N. J.

ON August 12th a man, twenty-six years of age, a plethoric German, applied for admission at St. Joseph's Hospital, giving the following history:

Eight weeks previously he had been bitten by a dog, whose teeth penetrated the coat and clothing, sinking into the shoulder and leaving marks over the deltoid and in the axilla. The dog had shown no signs of rabies but was immediately killed. The patient declared he thought no more of the matter until some weeks later when some of his associates suggested the possibility of hydrophobia and depicted to him the horrors of the disease. He became apprehensive concerning his welfare, and his anxiety increased more and more until he began drinking heavily to drown his thoughts, which he said constantly dwelt on this one subject.

On the evening before entering the hospital, August 11th, he had difficulty in swallowing a glass of beer, which increased his mental worry, and he spent a sleepless night. Upon admission to the hospital I found him exceedingly nervous and morose, dysphagia present to a well-marked degree, preceded by tremor of the entire body, and he objected seriously to the customary bath, both before and during the process. He was admitted at 4 P.M. At 7 P.M. he was given chloral, 20 grs.; bromide of potassium, 3 j., which dose was repeated at midnight, with ¼ gr. morphine hypodermically. He passed a very restless night, sleeping for only a few moments, waking with terrified cries. On the following morning the patient was able to drink milk with ease, but when he was urged to drink water dysphagia was more marked and accompanied by peculiar sounds from the throat. Temperature, 99⅘° F.; pulse, 85 per minute. He was exceedingly nervous and restless all day. In the afternoon he had hysterical spells of sobbing and terror without any apparent cause, and said that he realized that he was acting peculiarly but could not control himself.

Afternoon temperature, 100° F.; pulse, 90. At 9 P.M., besides the bromide and chloral, he was given ½ gr. morphine hypodermically, after which he slept a short time.

At 11 P.M. he attempted to jump out of the window, but was caught by an attendant. I was summoned, and found the patient violently delirious, imagining he was pursued by police and that they were concealed in the room. He made frequent efforts to get to the window, muttering incessantly in German and English, and in fifteen minutes became so violent that I was obliged to summon three attendants I had stationed conveniently, and it required the united efforts of us four to hold him in bed until he could be chloroformed and a canvas sheet applied. As a result of his violent and persistent struggles his heart action was about 200 per minute, and his breathing labored and irregular. His face was much congested, and his skin very hot and dry. I thought venesection advisable, and while he was still under chloroform I drew a quart of blood from the median basilic. This blood was at first very dark and thick, but later became normal in color and consistency.

His pulse improved in character, but not in rate, and respiration became less rapid, but was still very irregular. He was given twenty-five minims of tincture of digitalis hypodermically, but it had little apparent effect upon the pulse. As the effects of the chloroform wore off, his struggles continued, and he died four hours after the first appearance of delirium from sheer exhaustion.

The case is one of interest from the fact that a very peculiar neurotic affection should have been rendered fatal by an intercurrent disease brought on by the patient's efforts to cure himself.

RESULTS FROM CIRCUMCISION.

By JOHN W. S. McCULLOUGH, M.D.,
ALLISTON, ONT.

Among others, two cases are called to my mind, illustrative of the value of circumcision, by the article of Dr. Rosenberry, in the Medical Record of August 11th.

Case I.—Boy, aged three and a half, very intractable, incontinence of urine day and night; treated with strychnine and belladonna, then with strychnine and atropia sulphate. These, however, failed. The prepuce was very long and tight, so I performed circumcision, using cocaine anæsthesia. A complete recovery from the incontinence followed.

Case II.—Boy, aged one month. Two years ago a child in the same family, then of the same age as the present patient, had severe indigestion, for which no treatment was of any value. I advised circumcision, as the boy had a tight and elongated prepuce. The operation was refused, and eventually the child died. In the present instance the child had indigestion, screaming fits at night, and failed to thrive. The prepuce was, as in the former case, long and tight, the orifice being extremely small. My advice that circumcision be performed was concurred in by the consultant, Dr. J. Harlan Reed, of Horning's Mills. I did the operation without any anæsthesia, and used a couple of silk sutures on either side of the central tear in the mucous membrane. The wound healed without any trouble and the child's indigestion and screaming were gone almost from the hour of operation. Used when required, there is no doubt of the value of this little procedure.

PILOCARPINE IN THE TREATMENT OF ACUTE AND CHRONIC URTICARIA.

By R. ABRAHAMS, M.D.,
NEW YORK.
ATTENDING PHYSICIAN TO MOUNT SINAI HOSPITAL, OUT-DOOR DEPARTMENT.

My humble desire in this paper is to call the earnest attention of the profession, particularly at this time of the year, to the admirable action of a drug in a disease which very often baffles the therapeutic ingenuity of the general practitioner as well as the specialist. The symptom of symptoms which the physician is called upon to combat in acute or chronic urticaria is the terrible itching. It is hardly an exaggeration to say that this symptom is responsible for the many constitutional disturbances frequently observed in this disease. The hydrochlorate of pilocarpine promises immediate, certainly eventual, relief and cure of all the symptoms and the disease itself in a great majority of cases.

I do not wish to be understood as saying that pilocarpine is a specific for urticaria in the sense that mercury is in syphilis or quinine in malaria, for, in the nature of things, no drug can be a specific in a disease of a varied and obscure etiology. But the claim is emphatically made that the alkaloid will cure where all other means will fail to relieve. Not to weary the reader with a long list of successful cases, observed both in private and dispensary practice, I shall mention but three, which are at present most prominent before my mind, occurring respectively in a man, woman, and child. Let, however, every man try for himself and be convinced. Let him employ this treatment after all other treatments prove of no avail, my request being only that he observe the conditions hereafter mentioned, which are so essential to a good result.

Case I.—A friend of mine, a physician, had an attack of acute urticaria. The burning and itching were distressingly intense. He was restless and sleepless, without appetite and patience. Before I saw him he had exhausted pretty nearly the entire list of remedies. After one hypodermic injection of pilocarpine he was relieved. The second injection cured him.

Case II.—A lady, about fifty-five years of age, suffered a very severe attack of urticaria. Her body and face were one mass of burning wheals. I saw her in the morning; gave a hypodermic injection of pilocarpine. At my second visit in the evening, all I found left of the hives was the thankful victim to tell the tale of her bygone woes.

Case III.—A child, two and one-half years of age, suffered from a lichen urticaria for the last two years, always worse in the summer. I found the child in a most miserable condition, pale and emaciated, no sleep at night from the perpetual itching and scratching. Treatment was kept up at various places and by various men during the entire period. Six weeks ago I saw the little sufferer for the first time and at once put him on pilocarpine internally. A week later the child's rest was undisturbed at night and his appetite markedly improved. To-day the child is free from all urticarial miseries, and his health is in a first-rate condition.

The employment of pilocarpine in the treatment of urticaria is not entirely new, nor yet is it very old. The latest works on skin diseases and materia medica, as far as I could ascertain, hardly mention it. My first lesson in this new application of the drug I learned in Dr. Lustgarten's skin clinic (Mount Sinai Hospital Dispensary), with which I was connected as assistant for nearly three years. The drug there is used freely and satisfactorily, and on more than one occasion Dr. Lustgarten, in private conversation, extolled the virtues of pilocarpine in the disease in question.[1] I am, however, well aware of the fact that this medicinal agent failed to be of service in the hands of some good men, even skin specialists. The failure, it seems to me, is due to one of three causes: Either the urticaria was badly complicated by eczema, the result of scratching or strong applications, or the diagnosis was questionable, or the alkaloid was impure. A case in point: After relating my excellent results with pilocarpine in urticaria to an able physician he promised to furnish me with corroborative evidence from his extensive practice. A few days later he returned with evidence—of disappointment. At my request I was shown the patient, and found the fair dame a victim of a mild scabies instead of hives.

Now as to the mode of administration and dosage. An adult should get it under the skin, and a child by mouth. The dose for an adult is from one-sixth to one-half a grain, repeated every day or every other day, or oftener. For a child one year old, the dose is from one-twentieth to an eighth of a grain in distilled water every evening at bedtime. For a child from two to three years old, the dose is from one-fifteenth to one-sixth of a grain. By administering the alkaloid gradually, feeling one's way as it were, no untoward accident should be anticipated. Adults, however, seem to be more susceptible to its influence than children. A good precaution is to remain with the patient after exhibiting the medicine from fifteen to twenty minutes, and when given to children mothers should be instructed to use a little red wine or claret should the child show signs of weakness. I have seen only one man that complained of marked weakness after a hypodermic injection, and two patients were severely salivated. The first was restored by a little

[1] Brief reference was made by the doctor to the action of jaborandi in urticaria at a recent meeting of the New York Dermatological Society (Journal of Cutaneous and Genito-Urinary Diseases, June, 1894).

claret and the other two were relieved by holding ice in the mouth.

It seems that in order for pilocarpine to be palliative or curative in acute or chronic urticaria, it must make the patient sweat freely. I found that free perspiration is promptly and with a comparatively smaller dose produced in an adult than in a child, and herein is my guide to the increase or diminution of the dose.

To sum up: 1. Pilocarpine in urticaria is the drug *par excellence*. 2. Be sure of the diagnosis. 3. Before instituting your treatment, clear off complicating lesions. 4. Get a pure drug. 5. Have patience. 6. Push the drug to the point of tolerance.

In conclusion, I wish to state that in two cases of jaundice where the itching was quite annoying pilocarpine proved useful, and I have seen it also allay the burning and tingling sensations in other affections of the skin.

156 Clinton Street.

UNSUCCESSFUL EMPLOYMENT OF POTASSIUM PERMANGANATE IN A CASE OF MORPHINE POISONING.

By C. MONROE McGUIRE, M.D.,

WALSENBURGH, COL.

Having read in the Medical Record, and various other medical journals, of the many experiments with potassium permanganate with varying results, I have been urged to report my case, where the so-called antidote was tried in a case of an adult and found wanting.

I submit the following brief report, and will warn my professional brethren to beware of trying any new remedy until its physiological and pathological effects are known to be as represented, as I came near losing my patient by relying on permanganate of potassium.

On the evening of March 15th I was called to see Mr. M——, a travelling salesman, married, and of good habits. He had lost his position through no fault of his own, and was very despondent. I found him nervous, pale, nauseated; had been vomiting at frequent intervals for the past three days. No appetite, bowels torpid, dull headache; he said he did not think he needed medical aid, but his wife felt uneasy about him.

When I had examined him thoroughly and prescribed for him, I did not feel that I had struck the "key-note" as to the cause of his present condition. I assured him he would doubtless be kept in for two or three days only.

On the evening of March 16th, at 5.30 o'clock, I was hastily summoned to see Mr. M——. The messenger said he was dying (during the day it was known he had lost his position, so my first thought was, Mr. M—— has made an attempt to take his own life rather than stand the disgrace of being discharged). On entering the room I found him lying upon a bed in a profound coma, face cyanosed to a purplish dark color, breathing almost entirely suspended, heart slow and strong. He had taken the opiate only about one hour before, as it was afterward ascertained; the pupils were markedly contracted; he could not be made to recognize the loudest of noises. I was sure he had taken morphine. I lowered his head, raised a window, and practised artificial respiration till he breathed, then I gave him atropine sulph., gr. $\frac{1}{75}$, hypodermatically. Thinking the morphine had been all absorbed, as I did not know at what time he had taken it, I did not use the stomach-pump. Finally I got him to swallow, and gave him FE. ipecac. ʒ ss. by the mouth, which in the course of an hour and a half produced marked emesis. During this time several persons had come in, and we had him upon his feet supported by two or three men, and made him walk, or carried him rather, in a perpendicular position until he finally could speak and breathed without being told or made to do so by pressure over the chest. I gave him strong black coffee and more atropine sulph. while he was being walked around, until he seemed out of danger or in a favorable way to recovery. About this time my wife, Dr. Eva M. McGuire, came in and corroborated my diagnosis. The patient's wife, of course, expected him to die and asked me several times what I thought of his chances for recovery; I told her I thought he would live, but to satisfy her sent for my friend, Dr. W. H. Earnest.

At the time the messenger went the doctor was in the country, so it was some time before he came, perhaps three hours after I had first been called. The doctor hearing of the probable ingestion of an opiate brought with him one pound-bottle of potassium permanganate. He also corroborated our diagnosis. He proposed potassium permanganate in three- or four-grain doses by the mouth, saying that he was not at all sure of its antidotal powers, but thought it worth trying. I agreed, though I felt sceptical of it. At the time when Dr. Earnest came, I had not given any atropine for some time, and Mr. M—— was so that he recognized all who came in. At this time he was propped up in bed, when we gave him three or four grains of potassium permanganate. He seemed to be in a fair way to recover, though the pupils were still markedly contracted. In perhaps twenty minutes after the ingestion of the potassium permanganate Mr. M—— sank into a deep coma; he could not be roused by shouting into his ears, the breathing stopped, he became cyanosed to a dark color, and life seemed to be gone. I again practised artificial respiration, but this time without any success at all. He had not breathed for two or three minutes. During all this time Drs. Earnest and Eva McGuire stood by, when finally I raised him up and Dr. Earnest and I carried him in a perpendicular position to the veranda, where we gave him to two strong men who supported him in an upright position till he breathed. When he had been walked in the open air I gave him another hypodermatic injection of atropine, gr. $\frac{1}{60}$, and strychnia, gr. $\frac{1}{15}$. This was repeated in an hour, when his pulse became stronger again. He complained of dryness of the fauces and called for water frequently; we gave him strong coffee too. At 10 P.M. Drs. Earnest and Eva McGuire went home. Relays of men walked with him till 12 P.M., when I allowed him to go in the house and sit up in a chair. I had to tell him to breathe for about one and one-half hour longer, when I allowed him to go to sleep, and he only breathed seven to eight times per minute. I finally let him go to bed, but sat by him till 6 A.M., when he breathed twelve times per minute. He made a good recovery, and confessed that he had taken morphine.

PSORIASIS TREATED BY THYROID EXTRACT WITH NEGATIVE RESULT.

By CHARLES E. NAMMACK, M.D.,

VISITING PHYSICIAN, GOUVERNEUR HOSPITAL, NEW YORK.

Julius R——, aged seventeen, tailor, native of Russia, was admitted January 4, 1894. Eleven weeks before admission an eruption appeared on his face and extended over the entire body, including the scalp, with the exception of the palms and soles. Considerable itching attended the eruption. The case presented the classical appearance of psoriasis universalis, with a more extensive distribution than the writer had ever before seen, the patches assuming all sorts of features as to size and shape, and every region of the body being covered. The mucous membranes were not affected. The patient had never had a previous attack, nor could it be traced to either parent. He is an underfed and overworked boy, employed in a "sweater" shop. He gives no history of alcoholism, rheumatism, syphilis, or venereal disease. He was treated by arsenic, alkaline baths, and external inunctions in the usual way, until January 23d, when my colleague at the New York Hospital Out Patient Department, Dr. Prince A. Morrow, called my attention to Byrom Bramwell's report of the efficacy of thyroid extract in similar cases (*British Medical Journal*, October 28, 1893). A specimen was obtained from the New York Biological Institute, and administered in gradually in-

creasing doses, hypodermatically, up to twenty-five minims twice a day, without the development of any physiological action from the extract, and without any perceptible influence on the eruption. All other medication had been stopped at the time the thyroid administration was begun. Through the kindness of Dr. Morrow another preparation of thyroid extract, prepared by Dr. Crary, was then obtained, and the patient was given five drops of this twice a day, and the dose increased gradually until he had taken fifteen drops twice each day. No other medicine was used. He received the usual ward diet and was allowed to be out of bed. The thyroid extract did not increase the bodily temperature, nor accelerate the pulse, but a noticeable effect of its administration was a marked increase in the daily excretion of urea, confirming the results reported by Dr. Ord and Mr. White (*Therapeutic Gazette*, January 15, 1894). If it be true that thyroidectomy increases the toxicity of the urine, and that the function of the thyroid body is an excretory one (MEDICAL RECORD, February 24, 1894, p. 246), these observations have a peculiar interest, and the use of thyroid extract a wide therapeutic field. In this particular case it carried the amount of urea excreted, on a diet not very rich in nitrogen, up to from 875 to 1,025 grains daily. Its effect upon the eruption, however, was negative, such improvement as occurred being fairly attributable to the rest and hospital life. It was therefore discontinued on the fifty-fourth day.

29 EAST TWENTY-FOURTH STREET, March 22, 1894.

PREMATURE LABOR BEFORE THE SIXTH MONTH—SURVIVAL OF THE CHILD FOR ONE WEEK.

BY W. J. HILL, M.D.,

STATESVILLE, N. C.

UPON July 13th last I was called to see Mrs. C—— at two o'clock in the afternoon, and at five o'clock the labor was completed in a natural way. Very little blood was lost; the womb contracted tightly, and the woman did well generally. On January 18th she menstruated last. Everything went along all right until she was three and a half or four months gone, when she took a trip of twelve miles into the country in a rough wagon. Not being in the habit of riding she became very tired. That night "her sickness" came on her. Being somewhat alarmed, she came home at once, believing she would miscarry. From this time on until her confinement the loss of blood was continuous, amounting at times to flooding. Despite my efforts to control it by keeping her in bed and the free use of ergot and other remedies, I was importuned from time to time by herself and husband to bring on labor, but insisted on waiting as long as her life was not endangered, until the child was viable. Very little quickening was felt. In fact, she was so sure it would be born dead that she did not prepare any clothes for it.

The presentation was the one most usual. Though the second stage was not protracted, yet the child was livid and presented every appearance of being lifeless. As is my habit, I suspended it head downward, and in a moment I saw evidences of life. By my aid in artificial respiration it soon began to cry; I then in a few moments had it snugly wrapped in soft warm wraps, and had it laid away. After I had seen that the mother was made comfortable, I turned my attention again to the child; I refused to allow it to be washed for two days, neither did I allow it to be handled to dress it. It was at first allowed the sugar cloth, then it was put upon its mother's milk, which was milked from the breast and fed to it from a bottle and nipple. Afterward it took the breast. It slept well, bowels were regular in their action, as were also the kidneys. It lived for seven days. The nails were only shaped, but the infant had plenty of hair. No vernix caseosa present. It was born with the membrana pupillaris present. It measured eleven and a half inches and weighed one pound and two ounces. The morning after it was born I could cover the face from view with a silver dollar. The mother has borne four other children, and always went to full term. The child was allowed to get cold, and this I think caused its death. Upon examination I found that a considerable portion of the placenta bore evidences of having been detached for some time. There was very little fluid in the sac; it was of a brownish color with considerable sediment in it. This fluid also came from the mouth and nose of the child at birth. The mother made an excellent recovery.

TREPHINING FOR TRAUMATIC CLOT.

BY GEORGE G. HOPKINS, M.D.,

SURGEON TO ST. JOHN'S HOSPITAL, ETC., BROOKLYN, N. Y.

CHARLES BOLTS, aged twenty-seven; sea captain, single. Admitted to hospital September 16, 1893.

Eighteen days previous, during a severe storm, he was struck on the eminence of the left parietal bone by the main boom and knocked overboard; he had strength enough to catch a rope and was pulled aboard. His yacht was shortly driven ashore and wrecked, and he was pulled ashore by some of his crew in a semi-conscious condition. Later he lost consciousness, but for how long a period I have been unable to ascertain.

On admission to the hospital the patient was unable to give a clear statement of anything that had occurred during the eighteen days that had elapsed since the injury had been received. From friends who had watched him constantly, it was ascertained that his actions were very erratic. He would insist on going long distances to see friends, and when he reached his destination he wondered why he had come. He would stand for hours in the rain and refuse shelter, but would not or could not give any reason for so doing, etc.

He complains of headache, constant and severe, the greatest pain being over the site of the traumatism; has persistent nausea with vomiting and constipation.

Examination: Head found to be symmetrical on both sides. Tenderness exists over left parietal bone about two thirds distance from external auditory meatus to median suture. Pupils are equal, responding slowly to light. Pulse, 75; temperature, 97.5° F. Urine, sp. gr. 1.016, acid, amber color, no albumin, no casts, no sugar.

There is no tubercular, rheumatic, nor syphilitic history. Had drank heavily a few weeks before the injury.

September 21st.—To this date the patient had been on the medical side under care of Dr. J. E. Langstaff, who transferred him to the surgical side, and he came under my care. Vomiting very frequent. Bowels obstinately constipated. Headache persistent, and at times delirium.

Ordered,

℞. Potassii iod..... gr. iij.
" brom..... gr. vj.
M. S: T.i d.

℞. Chloral hydrat ..... gr. iij.
Spir. chloroformi ..... v.
M. S: T.i.d.

Pul. glycyrrh. comp., ʒj., repeated every four hours until a free action of bowels is secured. Hydrobromate hyoscin., gr. $\frac{1}{100}$ p.r.n.

22d.—Bowels moved freely. Condition improved.

23d, A.M.—Has retained both medicine and nourishment for twenty-four hours; P.M., had a severe attack of vomiting.

24th.—Three movements during the night. Retains nourishment and medicines. Slept seven hours. The first sleep of more than a few minutes since admission to the hospital.

October 7th.—Patient steadily improved till to-day. He was allowed to leave his bed and go about for an

hour. Nausea, frequent vomiting, and headache; returned.

8th.—Consultation by Drs. Burge, Rand, Rochester, Langstaff, Fairbairn, and Hopkins. The consultation decided "symptoms due to shock," Dr. Hopkins dissenting, considering "symptoms due to clot." I considered operative interference imperative. Not being sustained, concluded to wait as symptoms were abating.

11th.—Symptoms all aggravated again.

12th.—Headache constant and severe. Determined to trephine over the seat of pain.

Operation at 3.30 P.M. I operated in the presence of the staff, assisted by Drs. Wallace, Simmons, and Hotchkiss. Anæsthetic, ether. A curved incision was made through the scalp over the left parietal region, the skin and subcutaneous tissues were dissected backward, the periosteum was elevated, a seven-eighth inch trephine was applied over arm centre, and a button of bone removed. The dura mater was slightly lacerated by the trephine. Dura incised and turned back, and a clot one fourth of an inch in diameter found partly organized and removed. There was a pretty free hemorrhage, but it was easily controlled by pressure. Pad of iodoform gauze inserted in the wound after douching with Thiersch's solution. Dressing, iodoform gauze; returned to bed. Button of bone not returned, having become soiled.

13th.—Comfortable night, temperature, 100° F. Has lost power of right arm.

14th.—No motion in arm or leg on right side, some difficulty in speech. Headache entirely gone, nourishment retained.

15th.—Wound dressed, found perfectly aseptic. When dressing was removed power returned to both leg and arm.

19th.—Leg motion good, but that of arm impaired. Speech thick. Headache only occasionally, and very slight. No vomiting since the operation. Sleeps all night, and hallucinations and delirium have disappeared. His general condition is greatly improved.

December 17th.—Patient discharged from hospital. Right leg has recovered perfect power, speech is good. Full power in right arm has not returned, though he can use it for all ordinary purposes, and it is steadily improving. Headache gone, eats and sleeps naturally.

June 22, 1894.—He has now been at sea for some months and is perfectly well, but lacks strength in the three smaller fingers of the right hand.

This case bears strongly upon a theory I have long held, that there are many simple or weak-minded and epileptic people in the world who have received a traumatism, and who, had they been promptly relieved by surgical procedures, would have been saved from a living death.

TREPHINING FOR DEPRESSED FRACTURE TWO INCHES IN DIAMETER.

By GEORGE G. HOPKINS, A.M., M.D.,

BROOKLYN, N. Y.

Leonora B——, aged five. Admitted to St. John's Hospital May 4, 1894, apparently in a dying condition. She had been kicked by a horse over the right temporal and parietal region, causing a fracture which was two inches in diameter and depressed at its centre full half an inch.

I proceeded to operate under chloroform, assisted by Drs. Rand, Fairbairn, Simmons, Search, and Panton. All aseptic precautions were observed, an oval incision was made extending beyond the line of fracture on all sides, which was two full inches in diameter. The trephine was applied at the junction of the two smallest fragments and a ⅞ inch button of bone was removed, the greater portion being taken from the sound bone. The smallest piece was removed with forceps, as it had penetrated the cerebral substance, which was oozing, and to have raised it would have lacerated the cerebrum still more. Before the bones could be elevated to their normal position it was necessary to remove from the larger fragment its outer edge for an inch in length by a quarter of an inch in width.

The difficulty of replacement did not end here, as a third fragment was removed before satisfactory reposition could be accomplished. As a result of the operation, we had removed one piece of bone half an inch square, and portions of bone around two-thirds of the circumference of the fracture. A silkworm gut drain was introduced between the overlying tissues and the calvarium. The edges of the muscles and skin were partly sutured. A piece of sterilized gauze was introduced at right angles to the silkworm gut, and the flap closed over it. Douches were of Thiersch's solution.

The wound was left undisturbed until the ninth, when it was found perfectly aseptic, no pus having formed. Gut and gauze were then removed. On the eleventh the wound was again dressed, and is still perfectly aseptic. On the thirtieth the wound was entirely healed.

The temperature never rose above normal. The child was allowed to go home. Its mind is perfectly clear and has been throughout.

"No injury to the head is so slight that it may not cause death, and none so severe that a patient may not recover from it."

PERMANGANATE OF POTASSIUM IN OPIUM-POISONING.

By C. H. CALLENDER, M.D.,

NEW BOSTON, MASS.

H. C. W——, seven years of age, child of well to do parents. Has never been a very healthy boy, and on the night of June 16th suffered from a slight bronchial trouble which kept him awake the greater part of the time. At 7.30 A.M. of June 17th the nurse gave him, as she supposed, two drachms of arom. syr. rhei. He had then eaten a good breakfast, played around a few minutes, complained of being sleepy, and gone to bed.

His mother, who was at this time confined to her bed in the same room, knowing that he had not rested the previous night, thought it nothing strange that he should be sleeping and paid little or no attention to him. At 10.50 A.M., some three hours after taking the dose, I was hurriedly called (my office being less than seventy five yards from the patient's home). I found the child in his night-dress lying in his nurse's lap; face pallid, shrunken, agonized; pulse almost imperceptible; respiration very slow but not stertorous; skin covered with cold sweat. Asked what he had taken, and was assured that there had been nothing but some cough-syrup during the night, and the rhubarb.

Knowing the child as well as I did, and having seen him while visiting his mother the evening before, being sure that independent of the cough he was in better health than he had enjoyed for a long while, I felt so certain that he had obtained poison in some manner and of some sort that, without asking any more questions or making any more careful examination, I hurried to the office for stomach-pump, medicine case, etc. I was probably not gone two minutes, but before I was again in the house the mystery had been explained, and the bottle labelled rhubarb had been found to contain laudanum.

The pupils were very much contracted. Considering the length of time since the dose had been taken I thought the pump would be of little avail, and gave a hypodermic of whiskey, ordered some hot water in bottles, and then the thought of permanganate of potassium came to me I was not certain that I had any of the drug, but fortunately found about fifteen grains, and dissolved this amount in three ounces of water. It was probably not more than five minutes after the nurse, on going to the boy's cot, found something was wrong, before I had given him the first injection of permanganate. I used the ordinary hypodermic syringe holding xxx. minims, and injected deep every time.

At 10.56 A.M. I gave the first injection in the left arm.

The pulse, which was very unsteady, was 46; respirations, 8 to the minute. Twenty-five minutes later a second injection was given in the same arm, and ten minutes after this the pulse was 54 and more steady; respiration 12.

At 11.30 A.M. a third injection was made in outer part of the thigh. While introducing the needle I thought he attempted to move the leg a little. Five minutes later I put my finger on the eyeball and the lid closed quickly. I noticed the pupils had dilated considerably. Ten minutes later I called the child by name loudly, as I had done a number of times before. He opened his eyes and made a slight attempt to start up, as a person would when suddenly aroused from sleep.

The fourth and last injection was given at a quarter to twelve o'clock, and he fought against it pretty strongly. Pulse now 68; respiration 16 to 18.

Although he still seemed drowsy, he easily recognized the people in the room, and would call them by name when requested to do so. With a person on each side we now walked him about the room for a while. At noon I felt safe in leaving him, and returning in one hour's time found pulse, respiration, and eyes practically normal. I saw him again in the evening, and with the exception of some little pain at the points of injection I could not see but that he acted and felt as well as ever, and he has continued in good health to date.

The case is very much like one I witnessed while a student, some eight years ago, that proved fatal. The child, who was but eight years of age, took but little over a drachm of laudanum, was in the hands of a good physician in two hours' time. The coma was not so pronounced as in my case; but in spite of external warmth, friction, heart stimulants, whiskey, and atropia, he never awoke. Therefore, taking both cases in view, I feel just as sure as a person can be of anything in this world that the child owes his life to the permanganate of potash. It was not over one-half hour before the patient began to show signs of improvement, and it was simply wonderful how quickly he recovered after he once began to do so.

A PAINLESS LABOR.

Dr. Robert N. Flagg, of Yonkers, N. Y., writes: "Having attended a painless case of labor in a primipara, I am inclined to ask the question, How often do we see a normal delivery? The rarity of the experience in my practice, as well as in that of other practitioners with whom I have conversed, leads me to give a brief account of its progress.

"An American woman, born of Scotch parents, aged twenty-one, married eighteen months, ushered in her first confinement by the rupture of the membranes some three weeks before the expected time. This happened in the early afternoon, and at nine o'clock I was sent for, as it was still a question whether the labor was in progress. I found the patient seated up in bed, not as yet having had a pain, but a pressure at intervals of about fifteen minutes. On examination I was surprised to find the os well dilated, thinned out, and every evidence of the completion of the first stage. I returned in an hour, finding the head descending in the O. L. A. position, and very steady pressure about every five minutes. The patient still disclaimed having any pain, and as the pelvis was small and the descent rather slow, I put on the forceps and brought the head down upon the perineum. Before I had time to remove the instruments, the head was delivered, followed by the shoulders and body of a nine-pound boy. The advent of this good-sized baby was greeted by the cheery voice of the mother exclaiming, 'I have not had a single pain.'

"I had watched her through the second stage with great interest, and can say that with the exception of some decided straining and a redness of the face, there was no sign of the labor whatever. The placenta came away easily, and the lying-in period was uneventful. There was no lack of normal sensation about the pubic region, and her husband assured me afterward that she was not devoid of sexual feelings.

"Using the term in a polite as well as pharmacal sense, I consider this defecation of a baby as a missing link, lost in the progress of the race and the over-development of nerve tissue.

"Here was something perfectly natural, but so like the animals that one of my good patients considered it decidedly unscriptural."

A CONGENITAL DEFORMITY.

Dr. James B. Thornton, of Boston, Mass., writes: "From time to time the question of 'maternal impressions' is brought up by reports of interesting and peculiar cases. To vary the monotony of the expression suppose we use that of paternal impression and briefly detail a case to support the term.

"At 4.30 A.M., August 18th, the writer was summoned to attend Mrs. H. L. E——, in her first confinement. Birth was uneventful. On the following day attention was called to a growth on the outer side of the left little finger, near the junction of the middle and terminal phalanges. This growth was a veritable polypus (with a fine pedicle about half an inch in length) and about the size of a large pea, but flattened rather than round. Examination showed it to be of a heloid consistency, and section of pedicle caused but a small drop of blood to appear.

"The paternal interest in the matter was made apparent by the father showing me a sessile growth in identically the same location on his own hand, and which he stated was congenital, and had been a source of much anxiety to his parents, who feared it was of a malignant nature. In his case the tumor had never been operated upon, and had slowly grown smaller from his birth. If I can believe what was told me, the father and mother both made an early examination of the baby in question soon after its arrival, to find their fears confirmed."

MEMBRANOUS ENTERITIS.

Dr. J. M. Ward, of Cornelia, Mo., writes: "At a recent meeting of the New York County Medical Association Dr. Coyle mentioned a case of membranous enteritis where the treatment was correction of diet, rectal injections as a means of cleanliness, and keeping the bowels regular. He does not say that he cured the case by that treatment, and I venture to say that he did not. Early this summer I had a similar case, that I cured by the internal administration of tar, and the daily injection of tar-water. I received the treatment from Mr. David Wark, of New York. Here is what he says:

"'Treatment: Make of North Carolina tar a mass with wheat flour and a few drops of water. Cut into three-grain pills or put in capsules. Give four pills two hours after meals. On retiring use an enema of three ounces of tar-water and retain. In a week or less the bowels begin to move freely and normally, and all the local and systemic symptoms begin to disappear. It takes from two to three weeks to effect a cure. A grain or two of the extract of wahoo as an intestinal tonic, three times a day, completes the cure.'"

A Dog Receives Hospital Care.—The citizens of Bayreuth are mildly indignant because the favorite St. Bernard dog belonging to the Wagner family was treated in the city hospital. Dr. Landgraf, the family physician, and also surgeon to the hospital, received the animal and operated upon him in the regular operating-room of the hospital. The worthy burghers have petitioned the City Council to pass a resolution condemning Dr. Landgraf for his action.

The Universities of Holland, four in number, have 2,972 students, of whom 19 are women.

Society Reports.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, May 23, 1894.

GEORGE C. FREEBORN, M.D., PRESIDENT, IN THE CHAIR.

Rupture of the Urinary Bladder.—DR. EUGENE HODENPYL presented specimens from a case of extensive rupture of the urinary bladder. They had been removed from a woman sixty years of age, who had stated that six days before her admission to the hospital she had noticed an inability to move the legs or to urinate. She had received little or no treatment up to the time of her admission. She was then found to be somewhat apathetic; the abdomen was distended; there was complete paralysis of the lower extremities, and a small quantity of urine was escaping by drops from the bladder. The next morning she was noticed to be gradually failing in strength, and a few hours later she died. At the autopsy the abdominal cavity was found distended with fluid which was slightly tinged with blood; there was no evidence of peritonitis. At the fundus of the bladder was a linear rupture, almost two inches in length. The bladder was very large, and the mucous membrane was intensely congested. The other abdominal organs and the thoracic organs were normal. The dorsal portion of the spinal cord showed minute areas of softening, and the diagnosis of disseminated myelitis was afterward confirmed by a microscopical examination.

It was quite remarkable that there had been so little discomfort and such slight inflammatory action notwithstanding the amount of urine in the abdominal cavity. It was unfortunate that a bacteriological examination had not been made to determine the presence or absence of bacilli in this fluid. The microscopical examination showed intense congestion of the bladder mucous membrane, but no inflammation. The rupture must have been due to over-distention.

Prostatic Abscess.—DR. GEORGE P. BIGGS presented a number of specimens of prostatic abscess, and made some remarks on this subject based upon a study of the autopsy records of the New York Hospital for the past twenty-five years. In these records he had found ten cases of prostatic abscess, after excluding a few cases which were apparently peri-urethral abscesses, and did not definitely involve the prostate itself. Case of tubercular prostatitis had also been excluded.

The first specimen presented was from a man twenty-two years of age. He had given a history of gonorrhœa lasting for three months before his present illness. He had recovered from his attack entirely at the time of his admission to the hospital. Five days previous to his coming to the hospital, he was seized with retention of urine, and was catheterized daily. On admission, the temperature was 102° F., and the pulse 112. Examination showed a stricture in the deep urethra. On the same day he had a chill and a temperature of 105°. There were repeated chills after this, with a morning temperature of 99° and a evening temperature of 105°. Four days after admission, a swelling appeared in the perineal region associated with some local pain and tenderness. A median incision was made, and considerable pus evacuated from the neighborhood of the deep urethra. The patient died two hours later. At the autopsy, the spleen was found to be considerably enlarged and quite soft; there was an abscess five ctm. in diameter, and numerous smaller abscesses in the left kidney. The right kidney contained two small abscesses. The pelves and ureters were much dilated and inflamed. The bladder wall was thickened, and contained a small quantity of purulent urine. The left lobe of the prostate was the seat of a deep abscess, 1 ctm. in diameter, from which a probe could be passed to a peri urethral abscess 3 ctm. in diameter, located just in front of the prostate. The median perineal incision had passed from the perineal abscess into the urethra. The entire urethral mucous membrane was thickened and covered with a false membrane. There were evidences of a large calibre stricture in the bulbous portion of the urethra. There was a perforation in the left side of the urethra just in front of the urethral orifice, and this communicated with an abscess in the left lobe of the prostate.

The patient died nine days after the infection of the genito-urinary tract, and the cause of infection was probably the catheterization which was necessary before his admission to the hospital.

The second case was that of a man fifty-four years of age, who gave the usual history of stricture. Before his admission, sounds had been passed for the relief of this condition. Ten days before his admission to the hospital, he noticed a swelling in the right perineal region, and this increased rapidly in size. On admission, the temperature was 102.6° F., and his pulse 40, and the urine contained a large amount of albumin with granular casts. An abscess was found on the right side of the anus, and it was incised the next day and considerable fetid pus escaped. After this the temperature was not so high. About nine days after the first symptoms, he developed considerable irritability of the bladder, and examination of the urethra showed a stricture at four inches, which would only admit a filiform bougie. Two weeks after the onset of the first symptoms, external urethrotomy was performed, and the urethra was cut to No. 2, French. After this the temperature ranged from 99° and 102°. The patient became at first stupid, and then unconscious, and finally died of heart failure eighteen days after the performance of the external urethrotomy. No chills were recorded. At the autopsy, the kidneys were found to be the seat of quite extensive chronic diffuse nephritis, and contained also multiple miliary abscesses. The pelves and ureters were distended with purulent urine, and the mucous membrane was inflamed. The bladder was greatly hypertrophied, and the mucous membrane was inflamed and coated with pus. The prostate had been converted into a series of communicating abscesses, which had a capacity of two abscesses. A pin-hole opening connected the abscess with the urethral canal. The pus had infiltrated the connective tissue behind the prostate as far as the pelvic peritoneum, but there was no pelvic peritonitis. There was an incised wound in the perineum which communicated with the bulbous portion of the urethra, but had not opened into the prostatic abscess.

The interesting features were (1) a prostatic abscess developing a few days after the dilatation of the stricture with sounds, and (2) the relatively low temperature, the highest being 102.6°. The cause of death was general urinary infection.

The third case was that of a man fifty years of age. He denied ever having venereal diseases. Four weeks prior to his admission he developed rather suddenly a headache and a temperature of about 103° F. Two weeks later, quite violent symptoms of cystitis appeared, associated with retention of urine. Catheters were used daily for two weeks previous to his coming to the hospital. On admission, his temperature was 100° F.; respiration, 34; pulse, 32. There was a large fluctuating mass felt in the anterior rectal wall. He was catheterized, and fifty-two ounces of urine drawn off. The urine was acid, and contained five per cent. of albumin with considerable pus and blood. He had a chill on the following day, and a temperature of 103.4° F. He developed delirium, and a high temperature persisted. The abscess was opened by a high perineal incision and considerable pus evacuated, but the symptoms were not relieved. He died in a condition of coma a few days later. The autopsy was made thirty hours after death. The spleen was three times the normal size, and quite soft. The kidneys showed moderate chronic diffuse nephritis, and contained a few groups of miliary abscesses in their cortices. The pelves and ureters were inflamed and distended with purulent urine. The blad-

der contained about four ounces of purulent urine; the muscular wall was hypertrophied; the mucous membrane was softened, thickened, and of a greenish color and there was a small mass of fibrous exudation at the base. The prostate had been destroyed by suppurative inflammation, the pus being situated in indistinctly outlined spaces, having ragged walls, and not communicating freely with each other. The incision in the left side of the perineum had drained most of the abscesses on the left side of the prostate, but those on the right side were still full of pus. A sharply defined circular opening, 2 mm. in diameter, was located in the anterior rectal wall, and this communicated with one of the abscesses in the right lobe of the prostate. There was another opening, 2 mm. in diameter, and in the left side of the floor of the urethra just at its beginning. This communicated with an abscess 2 ctm. in diameter, located just behind the trigone. This abscess did not seem to communicate with any of the others. The urethra was congested throughout, but was normal in calibre. The mucous membrane in the bulbo membraneous portion was superficially lacerated in a longitudinal direction, probably from the rough use of the catheter. An immediate bacteriological examination of the pus evacuated at the time of the operation was made, and absolutely nothing found in the cultures except the staphylococcus pyogenes aureus. However, in the fresh pus stained on a slide, there were also some diplococci of uncertain character. Cultures taken at the autopsy developed, in addition to the staphylococcus pyogenes aureus, a bacillus which grew very rapidly and which was regarded purely as a contamination.

The points of interest in this case were, the development of the cystitis and the accompanying prostatic abscess, apparently as a complication of some acute febrile process. He had been catheterized for two weeks previous to his coming to the hospital. The abscess cavities in the prostate were of large size. The one on the right side communicated with the rectum, while that on the left side communicated with the urethra, although neither of the perforations were sufficient to drain the abscesses. The chills were frequent and the fever relatively high. The patient died of general urinary infection including the kidneys. The cause of the suppuration seemed to be the staphylococcus pyogenes aureus, although the other germs found in the fresh pus which failed to grow in the culture, might have had some bearing on it.

The fourth case was that of a Russian, twenty-two years of age, who was brought to the hospital in an ambulance after internal urethrotomy had been done at a physician's office. The hemorrhage had been so profuse that a large catheter had been tied in the urethra, and the patient hurriedly sent to the hospital. The urine was found to be loaded with pus and blood. On the day following his admission his temperature was 104.5°. The next day he had a slight chill, and the temperature remained high. An abscess had then developed in the supra-clavicular region on the left side. He became delirious and died nineteen days after admission. The autopsy revealed an extensive bronchopneumonia and an acute pleuritis. The spleen was three times the normal size and very soft. The kidneys were much congested and swollen, but contained no abscesses. The bladder contained a small amount of pus, and was acutely inflamed. The left lobe of the prostate was enlarged, and on incision was found to contain a large collection of pus. The axillæ and supra-spinous fossæ contained abscesses holding about six ounces of pus. The cause of death was a pyæmia, the kidneys and ureters not being affected.

The fifth case was that of a man twenty-eight years of age, from whom no previous history could be obtained, owing to his being in a comatose condition at the time of entering the hospital. At this time his temperature was normal, but on the following day it was 102° F., and it remained between 99° and 102° F. for a period of three weeks. He remained constantly comatose, and catheters were used to evacuate the bladder. At the autopsy the cause of death was found to be the rupture of an aneurism of the vertebral artery. Both kidneys were congested; the left contained a number of miliary abscesses; the right contained no abscesses. The bladder was intensely congested, and contained purulent urine. The prostate contained an abscess involving not only the prostate but the peri-urethral tissues in front, and communicating with the prostatic portion of the urethra and extensively invading the tissues into the pelvis. In this case, infection was evidently the result of catheterization during the comatose stage. The point of interest was the infection of one kidney only. The abscess communicated with the beginning of the prostatic portion of the urethra. There was no chill, and only a moderate elevation of temperature.

The sixth case was that of a man twenty years of age, who had sustained a fracture of the spine as a result of diving in shallow water. It was necessary to catheterize him. After this had been done several weeks, he developed a chill, followed by a temperature of 104.6° F. He then became delirious. The urine was found to contain blood and pus in large quantities. The temperature remained between 102° and 105° F. for six weeks. He passed into a state of low delirium, and finally died as a result of fracture of the spine and infection of the genito-urinary tract. The autopsy showed the spleen to be large and soft. The kidneys were the seat of chronic diffuse nephritis, and contained many miliary abscesses. The bladder was hypertrophied and filled with purulent urine. There was a large abscess about the neck of the bladder, surrounding the urethra and communicating with the rectum by two small openings, two and a half inches above the sphincter. There was no communication between the urethra and the abscess, or between the bladder and the abscess. The fever was relatively high —102.6° to 104.6° F. for six weeks. The cause of infection was catheterization. The communication was with the rectum, and not with the urethra.

The seventh case was a man thirty-seven years of age, who gave a history of having first had gonorrhœa eighteen years before, and six or seven attacks since that time. He had noticed symptoms of stricture for twelve years. A stricture in the anterior portion of the urethra was cut to No. 31 French. On the following day there was a chill, with a temperature of 104 6° F. The temperature ranged high—101.8° to 105.2° F. for a period of seven days. The autopsy showed the spleen to be large and soft. The kidneys were the seat of multiple miliary abscesses, and both pelves and ureters were dilated and distended. There was a laceration of the urethra just at its communication with the bladder on the left side. The left lobe of the prostate contained a large abscess, which communicated with the urinary tract at the site of the laceration above mentioned—*i.e.*, practically at the urethral orifice. The abrasion was apparently made during life, probably from the passage of a hard instrument. The left knee-joint contained this pus.

The eighth case was that of a man sixty-four years of age, who gave a history of chronic nephritis for four years. He had been frequently catheterized, owing to retention of urine. He died of uræmia, without suspicion that the genito urinary tract had been infected. The autopsy showed advanced chronic diffuse nephritis, but no abscesses in the kidney. The bladder was hypertrophied, and its mucous membrane thickened and ulcerated. There were abscesses in both the lateral lobes of the prostate, and also in front of the prostate. There was in this case simply an involvement of the bladder and of the prostate, the pelves, ureters, and kidneys not being affected.

The ninth case was that of a man forty-two years of age, who had had gonorrhœa twelve years before coming under observation, and constant gleet since that time. He had applied at dispensaries for retention, and

had been catheterized and treated with sounds without avail. Examination showed a stricture located at the bulbo-membranous junction, and a smaller one near the meatus. The latter was cut. Following this there was a chill and a temperature of 101.8° F. The temperature fell to 99.4° on the following day, but rose again to 102.2° F. The urine was diminished in quantity. He died eighteen days after admission. At the autopsy, the spleen was found to be quite large; the kidneys were the seat of advanced pyelo-nephrosis, but there were no abscesses in the kidneys. The ureters and pelves were dilated and inflamed; the bladder wall was considerably hypertrophied and its mucous membrane acutely inflamed. The bladder contained a small amount of purulent urine. There was an incision in the floor of the anterior portion of the urethra. The stricture at the bulbo membranous junction had not been operated upon in any way. There were two openings, one on each side of the urethra, just at the beginning of the prostatic urethra, and they led into abscess cavities in the prostate, having a capacity of one ounce. In this case, the pelves, ureters, and bladder were infected, but the connective tissue proper escaped.

The speaker said that out of the ten cases of prostatic abscess in which the records had been examined, six gave venereal histories, three denied such a history, and in one no record was made in regard to it. Catheters were used and appeared to be connected with the infection in five cases. In one case there was a question as to the use of the catheter, no record having been made in regard to this point, yet no good explanation had been offered of the source of infection. In three cases the infection was directly due to the operation of internal urethrotomy. In one the symptoms followed dilatation of an old stricture by sounds. Seven of the abscesses were large, and three comparatively small. Five of them communicated with the urethra only, and all of these communicated with the urethra in the posterior portion of the prostatic urethra. One communicated with the rectum alone; one with both rectum and urethra; and three small ones did not communicate with either urethra or rectum. In five cases there was cystitis and double pyelo-nephritis; in one, cystitis and pyelo-nephritis of one kidney; in one, cystitis and pyelo-nephrosis; in one, pyæmia with pyelo-nephritis; in one, pyæmia without pyelo-nephritis; and in one case there was no infection beyond the prostate. In three of the cases the temperature ranged between 104° and 105° F.; in five between 99° and 102° F.; in two there was no record of temperature, but it was probably quite low.

In all but one of the cases there was a history of the use of instruments in the urethra some time previous, or the infection followed immediately upon the operation of internal urethrotomy. There was evidently secondary infection, and it was quite possible that the severity of the symptoms might depend somewhat on the organisms producing the infection. The possible causes of death were pyæmia, septicæmia, peritonitis, or a simple genito-urinary infection exclusive of other diseases. Septicæmia was likely to occur in cases where there were large abscesses without secondary deposits of pus. Peritonitis might occur from extension of the inflammation to the connective tissue of the pelvis to the pelvic peritoneum.

The prognosis should be guarded, owing to the frequency with which prostatic abscess was associated with general infection of the urinary tract. In eight of these cases the kidney was involved. It would seem that the most frequent cause of death was infection of the upper portion of the urinary tract.

Dr. Samuel Alexander said that much credit was due to the reader of the paper for the way in which he had grouped his facts. There were acute abscesses occurring as a result of gonorrhœal infection of the urethra, and they were, perhaps, more common than the chronic. They were due to secondary infection, either through sounds or injections, and were marked clinically by the sudden onset of the symptoms—a chill and a much higher temperature than was usually present in the chronic cases. The diagnosis was not difficult if a rectal examination were made; the symptoms could be quickly relieved by operation. He thought that all the cases just presented should be grouped as chronic abscesses, because the condition which predisposed to the infection was chronic. Most of the cases there seemed to be a previous pathological condition of the urinary tract. In half of the cases there was a stricture of the urethra, and the autopsy showed secondary changes in the bladder and kidneys, thus predisposing to general infection of the genito urinary tract. One striking peculiarity of this series of cases was the large size of the abscesses. In most of the cases he had seen clinically the abscesses had not been nearly so extensive. We should distinguish between abscess of the prostate and peri-prostatic abscess. Regarding the prognosis, he would say that it depended more upon the pre-existing condition of the urinary tract and the severity of the infecting cause than upon anything else. Death was most rapid and the abscess formation most extensive in those cases in which there was a serious lesion of the urethra, causing obstruction, congestion, and infection. Regarding the mode of infection in the cases in which no catheter had been used, the speaker said obstruction in the urethra, by causing urinary overflow and congestion, led to infection. This condition occurred most frequently in patients over forty five. The perineal operation was, of course, the one above all others for the relief of prostatic abscess, and the moment such an abscess was suspected an opening should be made in the perineum. Where suppuration extended upward into the prevesical space this operation was necessary; but in addition to this it was essential, as shown in the cases under discussion, that dissection should be made between the prostate and rectum and all the pockets evacuated, and the abscess cavity curetted and treated aseptically.

Dr. Thomas H. Manley said that in those cases in which the spinal cord had been destroyed in the lumbar region as the result of injury, there were various modes of death, the most common being by infection of the genito urinary tract. Owing to the long, tortuous urethra of the male, this mode of death was much more common in males than in females. While he thought all must agree as to the good results of careful asepsis, the fact still remained that some subjects were morbidly sensitive to the passage of any instrument into the urethra. In cases of over-distention from paralysis of the bladder he had found that, in spite of every precaution, infection and death were liable to result.

Dr. George P. Biggs said that the cases reported in the paper were old ones, and in most of them infection had occurred from catheterization by the patient himself, or by some incompetent person, previous to the admission of the patient to the hospital. The importance of making a free opening should not be overlooked, for one of the cases showed that, notwithstanding the communication of the abscess and the perineal opening, drainage was not at all adequate to the needs of the case.

Congenital Absence of One Kidney and Ureter.—Dr. R. G. Freeman presented specimens from a case of the above. They were taken from a child aged ten months, who up to a few days before death had been perfectly well. It then developed croup, was intubated, and died from broncho-pneumonia and extension of the membrane. The right kidney and right ureter were absent. The left kidney was quite large, weighing three ounces. Three such cases had been presented to the Society—one by Dr. Northrup, in 1887; two by Dr. Thacher, in 1892; and one by Dr. Hodenpyl, last year. The condition was said to be quite rare, and the left one was the one most commonly absent.

The Society then adjourned.

Many Suicides of boys, from twelve to sixteen years of age, have recently been reported in London.

New Instruments.

AN IMPROVED CILIA FORCEPS.

By CHARLES H. MAY, M.D.,

CHIEF OF CLINIC, DEPARTMENT OF OPHTHALMOLOGY, VANDERBILT CLINIC, COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT OF COLUMBIA COLLEGE, NEW YORK.

Epilation of the lashes is a very simple process; but frequently it is rendered difficult and tedious on account of the improper and clumsy shape of the cilia or epilating forceps in the market. In blepharitis and in trichiasis in which epilation is performed there is no difficulty in pulling out the coarser lashes; but the fine and short hairs often give us much trouble, especially when they become moistened and slippery from tears and discharges of the lids; then we are apt to find that the forceps no longer catch.

To obviate this difficulty, I have had a forceps constructed which is a modification of one I purchased

of Windler, in Berlin, and which is referred to as "Brecht's" in his catalogue. In general shape it resembles the cilia forceps now in use; it differs merely in the construction of the extremities or points. These are claw-shaped, delicate, having a width of 2½ mm. The edges are curved, one being convex, the other concave; they are so arranged, through a slight difference in curvature, that pressure exerted in clasping the instrument tightens the grasp upon the hair and holds it firmly, without any danger of cutting it off. The instrument has given great satisfaction and has done away with the annoyances already mentioned. It is manufactured by Meyrowitz.

692 Madison Avenue, New York.

AN IMPROVED CONICAL RECTUM SPECULUM.

By ROBERT W. MARTIN, M.D.,

PHILADELPHIA, PA.

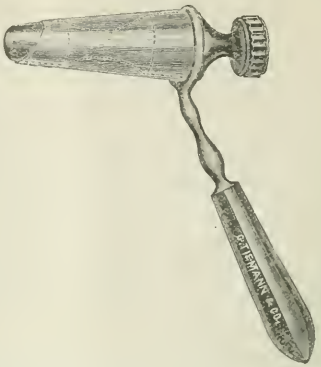
An instrument of precision applicable in the treatment of two out of every three patients who seek the office of the physician for treatment of the more ordinary diseases of the rectum is certainly a *desideratum*.

When I presented my new ano rectal speculum to the profession through the *Times and Register* (October 5, 1889), five years ago, I thought I had an appliance as nearly perfect as it was possible to make. And, indeed, for very many of the applications and minor operations within the rectum it was, and remains to me, indispensable. But longer use made it manifest that something was needed to supplement its usefulness. Consequently, a year ago, taking the ordinary conical speculum and enlarging its field of view, I had it made on the model of a symmetrical cone, truncated at a small angle, so that the obturator would fall into position without the trouble and delay of adjusting it to some particular line or mark on the base of the cone. The outer end of the obturator was supplied with a milled head of large diameter to facilitate its removal.

The base of the speculum was fitted with a firm handle of extra length and large grip adjusted to what was conceived to be the proper angle. Thus was made an appliance with which any portion of the lower half, or more, of the rectum and intra-anal tissues might be brought into view by successive small portions for the purpose either of inspection or treatment.

I have never used an appliance that has given me such supreme satisfaction in treating follicular ulceration, polypoid, and other small growths, which constitute a very large proportion of the cases of anal and rectal diseases the physician is called upon to treat in the ordinary routine of office practice. The cut gives a sufficiently clear picture to render further description unnecessary.

In the cut the handle appears attached at a greater angle than experience has shown to be desirable, the drawing having been made from the first specimen of the



speculum manufactured. It is now made with the handle attached at a much smaller angle with the axis of the speculum, making it as efficient in treating a patient with protuberant buttocks and deep seated anus as one with wide-apart tuber ischii and a more accessible anus.

I am indebted to Messrs. George Tiemann & Co. for their precision in executing my designs for the correction of what was faulty in the old and the addition of what is new to form a perfect new out of a faulty old form of speculum.

117 South Sixteenth Street, August 15, 1894.

A SNARE WIRE RECEIVER.

By GEORGE E. ABBOTT, M.D.,

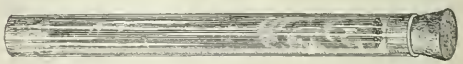
NEW YORK.

This can hardly be called a new instrument. Yet to some it may be a new and useful adjunct to their snare.

The usual routine, now, is to find the spool of wire, then the cutting forceps, guess at the length, cut, drop the spool, say something, wind up, and with difficulty fasten the springy wire, adjust the wire, and find it makes too small a loop, or, worse yet, too large a one, for the screw has been "run up" as far as possible; but the polyp has not yet been cut off and the snare is thus anchored in the patient's nose, to be delivered only by main force—of course not by pulling upon the whole snare, but by a straight pull upon the rod, through the cannula thus severing the growth.

The better way is to make a trial wire first, allow its ends to bend up at least a quarter of an inch, so as to hold well, "run up" the screw and be sure the entire loop will be drawn within the cannula, so as to completely divide the tissue within its grasp, with a few turns to spare for possible slipping or stretching of the wire.

With this as a sample, straighten the wire of the spool, and cut fifteen or twenty lengths.



Now cut a glass rod (scratch with edge of file and snap it in two) one inch longer than the wires, so as to allow of corks at either end; heat the ends red hot so as to round off the sharp edges; put in the bottom cork and cut it flush with the end of the glass, now the wires and the cork at the top. You will thus have saved time and labor, and very much annoyance when the patient is anxiously waiting for you to operate. A simple tube can be made by rolling some writing paper several times around a pencil or other cylinder.

125 West Eighty-second Street.

Correspondence.

EXAMINATION FOR CANCER-CELLS IN THE LIVING TISSUE.

To the Editor of the Medical Record.

Sir: While reading the article in the Medical Record of August 25, 1894, on "The Cure of Carcinoma of the Breast by Radical Operation," by Dr. William T. Bull, the idea occurred to me, Why not, in operating for the cure of malignant disease, make a microscopic examination of the living tissues of the wound, to ascertain whether all the cancer-cells have been removed. If the examination should reveal diseased structure still there, it could be removed before the wound is closed. If practical and practicable it seems to me that this would be a great advantage to the patient, giving her a better chance for her recovery, and reducing the mortality from carcinoma. It would also lessen the number of secondary operations. Could not a microscope be so constructed that with it the living tissues of the wound might be examined *in situ*, after the growth had been removed and before closing the wound? If this could be done I think it would be very useful, as cancer-cells are frequently left just in the edge of the wound. Of course this is but a crude idea, but I would like to know what the readers of the Medical Record think of it and its practicability.

Albert Seitz, M.D.

McMinnville, Tenn.

SOME SURGICAL OBSERVATIONS OF DR. FR. RAVOTH.

To the Editor of the Medical Record.

Sir: Some years ago Dr. Fr. Ravoth published a small volume containing short papers on a variety of surgical conditions. The book is dated 1873, and issued by Ferdinand Enke, Erlangen.

It is thought that the author's views on varicose veins, varicocele, etc., might be of interest, inasmuch as such procedures are not found in some of the more recent text-books on surgery, and seem worthy of consideration.

In the paper on the "Treatment of Varicocele by Means of a Truss," the author refers to other writers, to the results of treatment of hernia with truss, etc., and states that under pressure of a truss-pad the varicocele lessens in size, the testis soon becomes larger, and more consistent, while the pain in the testis and cord ceases. The enlarged veins being due to the weight of the blood, if by appropriate constriction the vein is relieved from this strain the part below the point occluded will recover itself. He believes that this mild method is more efficacious than the many ways of operative interference, which are not free from danger.

These ideas may be applied to other venous varices, *e.g.*, in the legs. (The treatment of aneurism, by pressure on the distal side of the tumor, may be referred to in this connection.)

The other papers are also of interest to the scientific anatomist, surgeon, and practitioner. In this relation worthy of special notice is his description of the surgical anatomy, with treatment of shoulder and elbow, and dislocations of them. He does not believe that there is, in any sort of sickness or injury, an absolutely pathognomonic sign. Strong disapprobation is expressed for the practice of making a "snap diagnosis," on which follows the hunting up of symptoms to support the *a priori* judgment. On the contrary, the correct method consists in—1, Investigation of the history and cause; 2, inspection; 3, palpation, or manual examination.[1] Such truths will bear oft repeating.

The faulty union of fractured patella is attributed less to imperfect nutrition than to failure in keeping up coaptation, for which bandaging should be applied to the whole limb, and not merely in the vicinity of the lesion.

[1] Loc. cit., pp. 210, 211.

The same ideas apply to fracture of the shaft, etc., of other bones. Bandaging restrains slight displacement of fragments by muscular or other mechanical action, thus allowing the healings to approximate that *prima intentione*.

F. B. Stephenson, M.D., U.S.N.

TWO MORE CASES OF PREVENTIVE INOCULATION OF IMMUNIZED SCARLET-FEVER BLOOD SERUM.

To the Editor of the Medical Record.

Sir: One of my sons, aged seven, being stricken with scarlet fever, I have inoculated, on the second day, two of my other children, who had not had this disease, aged five and two years. The blood serum was taken from their older brother, aged nine years, who had had scarlet fever six years before. Two drops, taken from a blister on his breast, were used for each child, and there was one inoculation only for each. There was no real isolation—separate bedrooms during the night, but free intercourse during the day. Now, the ninetieth day, no infection has been observed.

Albert S. Ashmead, M.D.

New York, August 31, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 8, 1894.

	Cases.	Deaths.
Tuberculosis	69	107
Typhoid fever	29	20
Scarlet fever	15	4
Cerebro-spinal meningitis	0	3
Measles	17	0
Diphtheria	110	27
Small-pox	16	1

The Dangerous Anti-Vaccinationists.—One of the most striking testimonies to the mischief that a knot of active anti-vaccinationists can do is shown in the experience of Stuttgart, the capital of Würtemberg, between the years 1864–1869. Stuttgart was the focal point from which radiated anti-vaccination influence, and, in consequence, not only many private citizens but the militia of that city were "unprotected." It had a population of 1,760,000 souls less than New York, yet in the five years indicated there were no less than 11,092 cases and 800 deaths. During that time there were 34 cases in the army of the whole country, but not a death; and now that vaccination and revaccination are not only compulsory, but done under a faithful inspection, the German army is the bright, conspicuous example, shining like a beacon, for all the world to follow. If Germany could build an impassable fence between herself and Russia, the whole country would soon show itself completely freed from the pest; but there is always an immigration from Russia into Germany of persons from that land, where the persistence of cholera shows the inability to cope with epidemics.—Mrs. H. M. Plunkett, in *The Sanitarian*, August, 1894.

Medicaments Derived from Coal-Tar.—As a consequence of the progress made in the manufacture of coloring materials from coal-tar, physiologists and physicians have been able to experiment with a host of new products, some of which have found a place as therapeutic or antiseptic agents. The substances submitted to such experiments are of very diverse nature, but there is observed in them, nevertheless, a limited number of characteristic groupings. They are phenols, acetylated amines, and sulphonated, sulphuretted, iodated, and chlor-

ated derivatives of the aldehydes. Methodical experiments have not been numerous enough, and the data furnished by biological chemistry are not precise enough to allow us to establish any relation between the constitution of these bodies and their physiological properties, provided any exists. Their applications, in fact, exhibit many anomalies. We see products that are very different as to constitution act upon the organism in a similar manner, and substances that are analogous, from a chemical point of view, produce very different therapeutical effects. With the information that we possess upon this subject it is hazardous to draw absolute conclusions. The number of organic bodies proposed as antiseptics or as medicinal products is very large, and one or more new medicaments are observed to make their appearance every day. We can mention but a limited number here, in selecting the most important of them. We have arranged these substances as antithermics and analgesics, and hypnotics and antiseptics. There is nothing absolute about this classification. A large number of these products has at the same time several of these properties. For example, chloral, which we place among the hypnotics, is an analgesic, and is even employed as an antiseptic, and asaprol is at the same time an antiseptic and an analgesic.

1. Antithermics and Analgesics.—Of all the artificial antithermics, antipyrine or analgesine is the most widely used up to the present. It is derived from phenylhydrazine, which is itself obtained by dinitrating aniline and in reducing the dinitro-benzol thus obtained. This phenyl-hydrazine is afterward condensed with aceto acetic acid, and then, finally, the product is submitted to a methylation. We have at last the dimethyl-phenyl-pyrazolon that constitutes antipyrine. It is very soluble in water, and this property permits of administering it under the most varied forms—a quality that is highly appreciated in pharmacy. It must be observed, however, that, as a general thing, solubility has no relation whatever with the quickness of action and assimilation of a medicament. Phenacetine, while being but slightly soluble in water, acts, nevertheless, as quickly as antipyrine. The success of antipyrine has evoked a series of experiments with the object either of preparing substitute antipyrines and of analogous pyrazolons, or of associating it chemically with other substances. In the first order of ideas has been produced tolypyrine, which is a paramethylated antipyrine in the phenylic nucleus, and then chlorated, bromated, etc., antipyrines. In the second series antipyrine has been associated with salicylic acid, and this has given salipyrine. Tolysal is the salicylic combination corresponding to tolypyrine. Apropos of hypnotics, we may mention hypnal, which is a derivative of antipyrine and chloral. Thalline and kairine are quinoleic products that have been proposed likewise as antiseptics. Among the oldest analgesics and antithermics we find acetanilide and antifebrine, which are prepared by treating aniline with anhydrous acetic acid. If, instead of operating with aniline, we start from hydroxylated aniline, that is to say, from a product which is both phenol and amine, and etherify it before acetylation, we shall have phenacetine or phenedine. Thymatecine is the phenedine of thymol, and exalgine is derived from the acetylation of methyl-aniline. Salicylate of soda has been for some time employed as an antirheumatic. Salicylic acid is a carboxylated phenol, that is to say, a body that is at once phenol and benzoic acid. It is prepared by passing a current of carbonic acid over phenate of soda at a high temperature. Several applications have been found for its derivatives, among which may be mentioned salipyrine, that we have spoken of above, and salol, which we shall find among the antiseptics. Asaprol has the same action as salicylate of soda. It is obtained by treating beta-naphthol with sulphuric acid at a low temperature. It is the sulphuric ether of beta-naphthol. It is offered in the state of calcium salt very soluble in water. Under the name of abrastol it has been used as a microbicide.

2. Hypnotics and Various Medicaments.—One of the most frequently employed hypnotics is chloral, which is the hydrate of trichlorated acetaldehyde. An endeavor has been made to associate it with various organic substances. In this way have been prepared: Chloralose, which is a combination of chloral and glucose; hypnal, which is due to the union of one molecule of antipyrine and one of chloral; and somnal, which is obtained from chloral and urethane. Sulphonal is likewise a very efficacious hypnotic, but its constitution has no relation with that of chloral. Chemically, it is called the diethyl-sulphone of dimethyl methane. It is formed by the combination of acetone with ethyl-mercaptan. Trional and tetronal form part of the same series. For skin diseases there have been proposed dermatol, which is the subgallate of bismuth; sulphaminol, obtained by the action of sulphur upon meta-oxidi phenyl-amine; resorcinol, which is a combination of iodoform and resorcine; and lysophane, which is chemically called triiodo-metacresol. Tumenol, thioline, and sulphonated thiophene are designed for the same use. Piperazine, a nitrated product of the closed-chain series, is diethylene-diamine. One of the processes of preparing it consists in causing ammonia to act upon bromide of ethylene. Orexine serves to stimulate the appetite. It is a hydrochlorate of phenyl-dihydro-quinazoline.

3. Antiseptics.—Among the organic antiseptics, we find, especially, bodies with phenolic and aldehydic functions, and halogenated derivatives. Phenol, beta-naphthol and guaiacol are characterized by the phenolic grouping OH directly connected with the benzolic or naphthalic nucleus. The use of a large number of phenolic derivatives has been recommended. Thus, salol is salicylate of phenol, and betol is the salicylate of beta-naphthol. The union of benzoic acid with naphthol gives benzo-naphthol. Abrastol, of which we have above spoken under the name of asaprol, is the salt of calcium of the sulphuric ether of beta-naphthol. It is a microbicide at present proposed for the preservation of wine. Among the phenolic products of less importance we may mention alumnol, sozol, daphtherine, phenoline, cresine, and microcidine. Iodoform is triiodated methane, analogous to chloroform as regards constitution. This antiseptic has, as well known, an insupportable odor. An endeavor has, therefore, been made to substitute odorless and likewise iodated substances for it. Among the bodies proposed to this effect we may mention diiodoacetylene or diiodoform. In order to prepare this alkaline hypoiodites are made to act upon an aqueous solution of acetylene, or water upon a mixture of iodine and carbide of barium, or else by treating acetylene with iodine in the presence of an excess of potassa at a low temperature. There likewise exists a tetraiodo-acetylene. The other iodated derivatives are: Traumatol (iodo cresylol), aristol (iodo-thymal), iodol (tetraiodo-pyrol), and sozoiodol (diiodo-paraphenate of sodium). Formol, which has recently been proposed as an antiseptic, is form-aldehyde. It has the great advantage of being volatile, and, consequently, of penetrating to the very interior of the objects to be disinfected. Ichthyol, anytine, thiol, and thiolinic acid are sulphonated and sulphuretted derivatives of organic and mineral oils employed in this state and that serve as solvents for products insoluble or but slightly soluble.

Among the substances mentioned, a small number only will doubtless receive the sanction of practice, but the road is laid out. On the one hand, syntheses are multiplying with the object of finding new series, and, on the other, the natural alkaloids are the object of numerous studies. With the means now at the disposal of chemistry, it is possible to study the active principles of digitalis, belladonna, and a host of other natural products. We shall certainly succeed in giving such alkaloids a greater energy, perhaps new properties, and even replace them by substances of which the syntheses will be only the results of a study of the products, of their reduction and of their decomposition.—*Scientific American.*

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THE TREATMENT OF ABORTION.[1]

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I AM prompted to write upon a somewhat worn subject by the fact that during the past year I have met with an unusually large number of cases of incomplete abortion which have been allowed to run on until they have developed more or less grave septic conditions, or have become seriously anæmic from the continued bleeding.

These cases, which I might use as illustrative, were none of them from my clinic at the Polyclinic, where we see them only too frequently, and where poverty, ignorance, and often previous treatment by equally ignorant midwives lead us to expect conditions otherwise inexcusable, but were all of them from the upper and middle classes, and were referred to me by intelligent physicians. So it seems, in spite of all that has been said and written in favor of active, efficient, and early interference, many practitioners prefer to take the chances of time and ergot in the hope, sometimes, it must be admitted, realized, that all will finally come right. Others, recognizing the necessity of action, but with an imperfect technique, partially succeed in clearing out the uterus by the aid of the finger or curette, and in the attempt carry infection into the uterine cavity.

It is true that cases of incomplete or neglected abortion do not usually die, either from the continued hemorrhage or from sepsis; they struggle through a period of acute anæmia, or fever and prostration, and finally may recover perfectly, but more often are left with a chronic infection affecting the endometrium or extending also to the tubes and peri uterine structures, a condition which, in the light of modern pathology, we cannot consider inconsequential, knowing that it so frequently leads to the most serious pelvic trouble. The truth of this statement may be easily proved by reference to one's private case-book, or by the records of any large gynecological clinic. Thus, out of five thousand consecutive gynecological cases which have come under my observation at the New York Polyclinic fourteen hundred and ninety-two, nearly thirty per cent. (29.8), had aborted one or more times, and of these five hundred and thirty-five, nearly thirty-six per cent. (35 8), suffered from disease of the uterus or appendages directly traceable to infection following abortion. It is safe to say that the immediate, thorough, and aseptic removal of the ovum, or its fragments, in these cases would have prevented the greater part of this disease and its attendant disability.

Before discussing our subject further it is necessary to understand what we mean by abortion, and to sketch briefly its causes, diagnosis, and course.

Abortion is defined by nearly all lexicographers as "expulsion of the fœtus before the seventh month, or before viability;" but to insure clearness it is advisable to limit the word to its stricter sense, of "expulsion of the ovum before the end of the third month," and to employ the term "miscarriage" for expulsion between that period and the time when the fœtus becomes viable.

Abortion or miscarriage may be from pathological causes affecting the fetal or maternal organism, or may be induced.

Maternal causes may be systemic—from poisons circulating in or conditions impairing the mother's blood, or disturbing the circulation mechanically, as syphilis, malaria, the exanthemata or other fevers of severe type; cholera, poisoning by CO, CO_2, and other gases; salts of certain metals (lead, copper, etc.), and vegetable alkaloids; albuminuria, cholæmia, lithiasis, anæmia; and visceral (liver, lung, and heart) disease affecting vascular tension.

Maternal causes may be local—from retro-displacement of the uterus, pelvic adhesions, endometritis, pelvic or uterine tumors. They may be reflex—from gastric, rectal, or mammary irritation, mental shock, or excessive emotion, exhaustion of nerve-force, as in chorea or in epilepsy.

Fetal causes may be primary or the result of maternal dyscrasia, and include disease of the fetal envelopes, as fatty, hydatidiform, or fibrinous degeneration, or inflammation or hemorrhage of the chorion or placenta, death of the embryo, or any malformation affecting the circulation of the fœtus and causing hydramnion or oligohydramnion.

Finally, abortion may result from combinations of any of these causes. Induced abortion may be accidental, legitimate, or criminal. Accidental causes may be uterine traumatism from blows, falls, wounds, excessive or violent coitus, etc., and we might again include here excessive emotion and mental shock. Criminal abortion may be from general violence, mechanical injury to the uterus or ovum, or from the administration of certain drugs.

The symptoms vary with the time at which the abortion occurs. If within the first six weeks the woman may complain only of a moderate amount of lumbar pain, dull and heavy or cramp like, or there may be no pain and an amount of hemorrhage, which she may consider as simply an excessive menstruation. Very often she does not recognize the passage of any shreds of tissue, or clots, and the abortion passes unnoticed. At other times portions of chorion remain behind, and she comes to the physician complaining of the prolonged spotting or flow. Later, and up to the time when the placenta is fully developed, the lumbar pains are more marked, the cramps more severe and rhythmical, and the hemorrhage much greater in amount. If the abortion be the result of natural causes and the death of the ovum has occurred several days before its expulsion, it usually comes away entire. If the ovum is alive, or if the abortion be induced by mechanical means, the fœtus usually escapes, leaving the whole or a part of the chorion behind.

Bimanual examination shows the uterus enlarged, soft, except during a contraction, the cervix softened and more or less dilated, and often with a portion of the ovum plugging the os. After the expulsion of the entire ovum the pains and bleeding cease and the uterus contracts. If a portion of chorion or placental tissue be retained, the bleeding, pain, and dilatation may continue until it is expelled, or the cervix may contract, the pains become slight or cease, the bleeding stop, and the mass be retained either to disintegrate and come away in the discharge, to become septic, or, exceptionally, to develop into a fleshy mole. Rarely there may be death and infection of the ovum without producing either pain, hemorrhage, dilatation, or foul discharge, the only symptoms

[1] Read before the New York Academy of Medicine, April 26, 1894.

being cessation of uterine growth, followed by irregular slight chills and septic fever.

After the third month the symptoms approach more nearly to those of a premature labor. We have the rhythmic pains, the hemorrhage, which is apt to be more profuse, the dilatation of the os, and, more often, the spontaneous evacuation of the entire contents of the uterus.

Abortion may be considered inevitable when the result of a cause that cannot be removed, when the pains are severe or rhythmical, the hemorrhage profuse, the os widely dilated, or when any portion of the ovum has been expelled.

Threatened abortion may sometimes be averted when the cause is a remediable one, and the pains, bleeding, and dilatation are only moderate. When abortion becomes inevitable one of two things happens, either the uterus empties itself entirely, or a portion of the ovum is retained. In the first case the uterus contracts, the pain and hemorrhage cease, there is a pinkish flow for a few days, involution proceeds normally, and the condition remains practically the same as before conception. If, however, portions of placenta or chorion remain in the uterus the clinical picture is changed. The symptoms noted diminish at first, but do not entirely disappear; the pain may cease for a time and then reappear, and the fragments be expelled, or the os may contract and the fragment be retained until it gradually breaks down and passes away with the discharges. In this latter case the bleeding continues, as a persistent leakage, often for from three to six weeks, and may reduce the patient to an extreme degree of anæmia, though it in itself rarely kills. Very often, and almost certainly, if this incomplete abortion be the result of criminal interference with the ovum, the retained tissues become infected and we have a septic process begun which may induce serious and persistent pelvic disease or directly destroy life. Sepsis is the condition most to be dreaded, the condition to be most carefully watched for, the condition to be most vigorously fought against. We must always be on the watch for its first symptom, and when we recognize it, whether it be as an elevation of temperature, a chill, or a fetid discharge, we must remember its probable source and explore the cavity of the uterus. Septic material may be there even though the cervix be perfectly contracted and hard, though there be no hemorrhage, no discharge, and possibly no other local symptom. I have seen several instances to which this description would apply, one of which ended in death. But the sepsis is not usually of a virulent type, the case runs on, the woman recovers from the immediate danger, but the fever, the hemorrhage, the infection, have interfered with involution; the uterus remains large, heavy, and soft, and is apt to become retro displaced; the infected mucosa, thickened, soft, and friable, becomes the seat of a chronic endometritis which may at any time lead to tubal and ovarian trouble, and the woman suffers indefinitely from the metrorrhagias, the pelvic pains, and the systemic depreciation which accompany these conditions.

Treatment.—A local examination is always imperatively necessary when any of the signs of impending abortion appear. Then, if the symptoms are not marked, if the pains are slight and irregular, the bleeding moderate, the os not much dilated, and the cause one that can be remedied, as, for instance, retroversion, we may hope by absolute rest in the recumbent position, by the administration of full doses of opium, and viburnum by suppository, or morphia hypodermically, and by the replacement of the displaced uterus, to carry the patient through her period of danger and allow the gestation to continue. If the cramps are regular and well marked, the hemorrhage considerable, and, particularly, if the os be dilated, these hopes will not be realized, the loss of the ovum becomes inevitable, and it is our duty to hasten its expulsion. As the method of procedure now varies according to the period of gestation, we may draw a line of division at the end of the third month and consider the case as either "abortion" or "miscarriage."

Abortion.—As the uterus before the end of the third month is still comparatively small and will not allow the accumulation of any considerable amount of blood in its cavity, the use of the tampon is sometimes permissible before the expulsion of the fœtus, not so much to check bleeding as to excite more vigorous expulsive contractions. When expelled, the patient is to be put in the dorsal position on a Kelly pad, the vagina and cervix thoroughly cleansed by a douche of hot soap-suds rubbed into all folds and crevices by the fingers, and followed by irrigation with 1 to 4,000 warm bichloride solution. Then a strip of sterile iodoform gauze is carefully packed into the cervix and the vagina tamponed. This packing is removed in from eight to twelve hours, and afterward the ovum will be found loose in the vagina or in the dilated os. If at this time no portion of the ovum be expelled, that is, if its envelopes be still intact, the packing may be carefully repeated. If any portion of the ovum has been expelled, the remainder should be removed at once, either with the finger, which can seldom be used at this early period, with the ovum forceps, or with the dull curette.

If there be reason to believe that the abortion has resulted from criminal interference, if the case has been allowed to run on for many days, if there be endometritis or any form of sepsis, the os should be dilated, preferably after the administration of an anæsthetic, the fragments of the ovum removed, and the whole interior of the uterus scraped carefully and thoroughly with the sharp curette, washed clean with a strong watery solution of iodine and packed with a strip of sterile iodoform gauze. This gauze should be removed in twenty-four hours and the vagina irrigated. If septic symptoms continue, the uterine cavity may be again irrigated with the iodine solution, and a fresh strip of gauze carried to the fundus.

The effective and safe manipulation of the curette and gauze in this manner presupposes on the part of the operator a certain amount of skill and familiarity with its use.

Miscarriage.—After the third month the use of the tampon for hæmostatic or other purposes is reprehensible, as the uterus is then larger and dilatable, so that a dangerously large amount of blood may accumulate in its cavity. If the hemorrhage from a miscarriage is moderate, the treatment may be expectant for a limited time until the entire ovum or the fœtus be expelled. If the fœtus alone be discharged, the remaining portions of the ovum should be immediately removed with the finger, aided, if necessary, by the ovum forceps or large curette. If the hemorrhage be profuse there should be no delay, the os should be dilated and the uterus cleared out at once. Where there is sepsis the indication is for the use of the sharp curette, irrigation, and packing, as already described.

When we have legitimate reason for inducing abortion it is best done by immediate clearing out of the uterus after anæsthesia and rapid dilatation, the uterus being washed clean and a strip of gauze introduced for drainage. When miscarriage becomes necessary the preliminary dilatation is usually best secured by the employment of an aseptic tupelo tent of the largest size that can be inserted into the os, then, if the ovum be not spontaneously and completely expelled it is removed digitally or with instrumental aid.

To avoid danger and secure success in these manœuvres it is necessary that they be done aseptically and by one accustomed to surgical cleanliness. The hands and arms of the operator should be scrubbed for five minutes with a stiff brush with soap and hot water, and then soaked for the same time in a 1 to 1,000 bichloride solution. The instruments can either be wrapped in a towel and boiled at the time in a weak solution of soda for fifteen minutes, or may be carried already sterilized, and laid on a sterilized towel ready for use. A strip or strips of sterile iodoform gauze should also be prepared and wrapped in a sterile cloth.

Tupelo tents may be sealed separately in small enve-

lopes and baked for half an hour, and are then ready for use when wanted. The Kelly-pad requires most careful attention, and must be thoroughly washed in running water, rinsed in the bichloride solution, and carefully wiped dry each time after use. The fountain syringe used for irrigation may be scrubbed in hot water and soaked in bichloride, or boiled if used where there is a suspicion of sepsis. The patient, after having had her bladder and bowels emptied, is to be placed in the dorsal position on a table; or the hips may be brought to the edge of the bed, a firm bearing surface for the Kelly-pad being secured by a table-leaf, ironing-, or lap-board; and the external genitals and vagina thoroughly cleansed with hot soap-suds, two fingers being used to rub over the mucosa of vagina and cervix. This should be followed by irrigation and rubbing with a 1 to 4,000 bichloride solution. The parts adjacent to the vulva and the exposed portion of the pad are then covered with wet sterilized towels and the operation performed.

In conclusion, I may state my position briefly as follows:

Recognizing that any interference with the uterine cavity must be looked upon as a possible source of infection, and must be made aseptically and with antiseptic precautions to be free from danger, I strongly urge that in every case where abortion or miscarriage begins acutely and from natural causes, the ovum be removed by the finger, ovum forceps, or curette, within twenty-four hours after the abortion be considered inevitable, if the entire ovum be not then already expelled, complete expulsion being indicated usually by cessation of pain and hemorrhage. In cases where a portion has been expelled, where we find serious hemorrhage, where the ovum is dead, where we have reason to suspect criminal interference, where there has been continual spotting, foul discharge, or fever, the uterus should be explored and emptied at once, as any delay greatly increases the risk of sepsis. The sharp irrigating curette, followed by gauze drainage, should always be used where there is septic material present, or where the endometrium is diseased, in other conditions the finger or a dull instrument is sufficient.

71 West Forty-fifth Street.

A Reminiscence of the Late Professor Hyrtl.—A correspondent of *The Lancet* says that the famous anatomist who has just died at Vienna was always considered an eccentric man because his dress, his manners, and his mode of life differed in some respects from those of other people. It was particularly his time worn garments that made him conspicuous, and he used in his walks the same soiled blouse which he wore while engaged in his laboratory or in gardening—his favorite hobby. This characteristic of Hyrtl gave frequent occasion for ludicrous incidents, at which he himself used to laugh most. A few years back, when he was still in possession of his eyesight, he was accustomed to walk to Liesing, a charming Viennese suburb, where, in the beer-garden of the brewery, he refreshed himself with a glass of its well-known beverage. One afternoon he entered the garden and seated himself near a table at which a few merry Viennese burghers were engaged in diminishing the contents of a dish of stewed fowl. These gentlemen had no idea of the identity of the newly arrived guest, and after eying his simple twill suit came to the conclusion that he must be an inmate of the Liesing asylum for the poor. A good portion of the meal having been left uneaten, one of the guests called the waiter and told him to take what was left to the poor man sitting near them. The famous *savant*, appreciating the joke, ate a few morsels and, after expressing his thanks, left the garden. A few moments later two waiters carried in a big bowl from which the heads of champagne bottles were protruding. "We have ordered no champagne!" cried the burghers, and their astonishment may easily be guessed on their being informed that "the inmate of the local asylum for the poor" had sent them the champagne as a mark of his gratitude for the stewed fowl. and that the donor was no less a personage than Professor Hyrtl.

SOME RECENT MEASURES IN THE TREATMENT OF EPILEPSY, WITH SPECIAL REFERENCE TO THE USE OF OPIUM.

A Year's Experience with Flechsig's Plan.[1]

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The treatment of epilepsy to day is about as unsatisfactory as it was ten years ago. That is, a decade that has witnessed a considerable addition to our knowledge of the causation and pathogenesis of this disease has seen no striking addition made to its therapy.

It is not presumptuous to say that notwithstanding the persistency with which other measures have been advocated and the extravagant results claimed for them, that to day bromide of potash would not be exchanged for all the other means combined. I do not mean to decry the value of other measures, nor in any way to deprecate their claims in the treatment of this disease, but merely to state what I believe to be a fact.

That there is no dearth of activity in searching for a more curative agent than the bromides in this disease one can satisfy himself by glancing at the literature of the subject from year to year. Although many agents are recommended but few are chosen, after a more or less thorough trial. Among the measures recommended within the past few years those deserving of consideration have been more particularly, 1, borax; 2, simulo; 3, antipyrin and antifebrin; 4, nitro-glycerine; 5, anti rabic virus, under which may be included for purpose of convenience the "organic extracts;" 6, the various combinations of the bromides.

Among those recommended, but having very little claim for their consideration, are 1, hypnotism; 2, hydrastinine; 3, salicylates; 4, duboisine, picrotoxin, cannabis Indica, belladonna, etc.; 5, amylene hydrate; 6, osmic acid and sclerotinic acid.

Since Gowers recommended the use of borax in epilepsy twenty-five years ago, it has been used more or less in obstinate cases that resisted the bromide treatment, and in cases where for some reason the bromides could not be administered. It has taken a definite place in the therapeutics of this disease, as is attested by many of the most trustworthy clinicians.[2]

Its efficiency compares in no way with the bromides; but as an alternate and adjuvant of the bromides it is, when given in proper doses (about 3 ij. *per diem*), a useful and valuable addition to our therapeutic resources in this disease. Its efficaciousness is frequently seen in controlling night attacks while the continuous administration of the bromides prevent the day attacks. The drawbacks to its use are the frequency with which it causes distressing attacks of eczema, psoriasis, impairment of the digestion and nutrition, and even toxic effects. Enthusiastic reports of its efficacy and curativeness now and then crop up,[3] but they are generally accompanied by such meagreness of detail or absence of a judicial weighing of evidence, that they are to be taken with circumspection.

The place held by simulo in the treatment of epilepsy does not compare favorably with borax. Since its introduction by Dr. W. Hale White in 1888 it has apparently never been extensively used. Although White's report of its use in seven cases was encouraging, Eulenberg, who tried it in both hysteria and epilepsy, was not favorably inclined to it. Given in doses of from a half to two drachms of the tincture three times daily, it will, in

[1] Read before the New York Academy of Medicine, April 5, 1894.

[2] Folsom: Boston Medical and Surgical Journal, 1886; Mairet: Le Progrès Médicale, February 6, 1892; Stewart: Alienist and Neurologist, January, 1891; Fere and Lamy: Nouvelle Iconographie de la Salpêtrière, November and December, 1889; Russell and Taylor: Lancet, May 17 1890.

[3] Dijoud: Lancet, July 18, 1891.

some cases, especially of haut mal, give gratifying results, as it has done in one patient at present under the writer's observation. It in no way compares with the bromides.

Antipyrin and antifebrin have been used more extensively in epilepsy than have most new remedies, and in many cases with gratifying results. Lemoine[1] was struck by the value of the first of these in a case which always occurred at the menstrual period, in one associated with migrain and in another of the type of epilepsia larvata or psychical epilepsy. McCall Anderson and Jack report a case of traumatic epilepsy cured[2] in three months by the administration of antipyrin in doses beginning with five grains three times a day and increased one grain a day. The cure was effected when the patient reached a dose of twenty-five grains. It is unnecessary to comment on this case, except to repeat that a case diagnosed, treated, and recorded as cured all within six months should not be taken too seriously.

Salm's[3] experience with antipyrin was not so satisfactory. In fact he thought the results of its use were quite negative. When given in conjunction with the bromide of ammonium, as has been recommended by Wood, it has given very gratifying results and is attested by Potts,[4] May,[5] and Dana.[6]

A combination of antipyrin with the other bromide salts is probably as serviceable as the combination with bromide of ammonium. Amade[7] reported cessation of attacks for four months in moderate epileptics under this treatment. The general consensus of opinion in reference to antipyrin and antifebrin is that the former is preferable, and when given in from five to ten-grain doses three to four times daily it materially enhances the value of the bromides in the treatment of idiopathic epilepsy, particularly in the less aggravated clinical forms.

Nitro-glycerine has been used to a considerable degree in idiopathic epilepsy. It has been specially recommended in cases that are attended with vasomotor aura. One of the most recent writers who calls attention to its use is Osler.[8] It is most serviceable in cases of petit mal and must be given in large doses, two to five drops of a one per cent. solution, and in such doses it is apt to produce intensely disagreeable symptoms. Its value as a therapeutic agent in epilepsy is slight.

Attention was first called to the beneficial effects following anti-rabic inoculation of epileptics by the cessation of attacks in two children who had been inoculated for rabies by Pasteur.[9] Other cases showing the beneficial results of this form of treatment have been reported by Charcot,[10] Giovanni,[11] and Ariostigni.[12]

It is distressing, however, to have to repeat that these cases were reported too early to be of very much service in determining the value of anti-rabic virus as a form of treatment.

It should be remarked here that some of the cases (Charcot's) were shown to gatherings of medical men merely to demonstrate the effect the inoculations had in checking the attacks temporarily. It is sufficient comment on this way of breaking epilepsy to say that the results of its use, limited though it has been, nor any theory on which its efficacy might possibly be based, have not appealed to the medical profession. A more recent treatment of epilepsy, and one which has, to my mind, absolutely no *raison d'être*, has been introduced by Babes, of Bucharest, and Gibier, of New York. It consists of the hypodermatic injection of the extract of the cerebrum of the sheep, freshly prepared. Although the two investigators quoted above have made serious claims for its efficacy, it is probably no exaggeration to say that this agent is as nearly useless in the treatment of epilepsy as any substance which a physician essays to employ with a considerable éclat can possibly be.

Not even the remotest rational explanation can be advanced for its use. The substance cerebrin has no physiological action which would suggest it to be an anti epileptic agent. At the present day no one will gainsay the statement that the "organic" extracts depend for any activity that they may possess on their chemical constitution. And when introduced into the system they act and can only act just as analogous chemical substances obtained from other sources do.

No analogy between the use of the thyroid in myxœdema or the use of the thymus in pseudo-hypertrophic paralysis can be advanced to explain the use of cerebrine in epilepsy. The brain is not a secretory organ, as are the thyroid and thymus, and its constituents are easily separable by the chemist. These chemical constituents, or as many of them as are not inert, are responsible for any change that the patient has in his symptoms while being subject to treatment by these extracts.

The report of cases of epilepsy treated by this method by Babes is so glowing and enthusiastic, and the statement of his results are so indefinite that one need make no comment.

Gibier has published two articles in which he details the results that he has obtained. A careful examination of his report will show that the results barely warrant him in his conclusion, a very modest one, "That the method is beneficial in adding to the favorable effects derivable from other therapeutic agents."

Everyone who has much to do with the handling of epileptics knows how susceptible they are to new, and especially novel, methods of treatment and how frequently the attacks are for quite long periods amenable to such procedures. The personal factor in the handling of the cases reported by Gibier will probably account to a considerable degree for the amelioration of symptoms that they present. Further it may be said that there is scarcely a remedy that has been advocated for epilepsy that has not, in the hands of its advocate, given far better results than has brain injections. I do not wish, however, to criticise it harshly, but merely to express an opinion as to its entire worthlessness and uselessness.

The various combinations of bromine, such as bromide of camphor, of nickel, of lithium, of strontium, of arsenic, ethyl bromate, rubidium-ammonium bromide, etc., have had their advocates and are in many cases of great service, not only as adjuvants to other plans of treatment but as exchange materials for the bromide of potash and soda when the system does not well tolerate the continued tenancy of the latter.

Ferè has recommended the bromide of strontium, but others, with the exception of Deny,[1] who have utilized this suggestion, have not been able to corroborate his good opinion of the drug. Halsted, however, reports with some favor his use of this salt. The bromide of zinc and the bromide of nickel have both been extensively used. The latter, originally recommended by Dr. Costa, was found to be quite useless by Bourneville,[2] who gave it a very extensive trial. Bromide of zinc has been given by Hammond, Charcot, Bourneville and other clinicians, but there is so much uncertainty about this salt, both in regard to its dose and its action, that it would be better not to consider its use at all. For instance, it has been recommended by the writers mentioned above in doses varying from 5 to 30 grains, while a recent number of the *Pharmaceutical Gazette* stated its dose to be from one half to one grain. Ethyl bromate has been recommended by Donath[3] in doses from 30 to 40 drops three times daily and increased to twice this amount if the stomach will stand it. He recommends its administration with oil of peppermint or in capsules.

[1] Gaz. Med. de Paris, No. 52, 1887.
[2] American Journal of the Medical Sciences, May, 1891.
[3] Neurologisches Centrbl., No. 11, 1887.
[4] University Medical Magazine, October, 1890.
[5] Detroit Medical Age, July 25, 1891.
[6] Text-book of Nervous Diseases, 1893.
[7] Wien. Med. Presse, Nos. 13–15, 1889.
[8] Journal of Nervous and Mental Diseases, 1888, p. 38.
[9] Wien. Med. Presse, No. 24, 1892.
[10] Lancet, May 28, 1892.
[11] British Medical Journal, September 4, 1892.
[12] Revista de ciencias medicas, July 5, 1892.

[1] Semaine Médicale, August 10, 1892.
[2] Progrès Médicale, No. 26, 1889.
[3] Therapeutische Monatschrift, June, 1891.

Corroborative evidence of Donath's estimate of the value of ethylene bromate is given by Olah,[1] who finds that the attacks are milder and less frequent, and that it does not produce bromism. The objections to its use are its extreme volatility and unstableness.

The less important measures against epilepsy that have been enumerated above may be disposed of very rapidly. If our conception of the pathology of epilepsy is correct, or anything approaching correctness, it is an insult to our intelligence to speak of the curative effects of hypnotism in this disease.

The use of hydrastinine, as recommended by Arkhangelsky,[2] has not been successful in the hands of other physicians.

Whatever virtue the salicylates may have in the treatment of epilepsy should be attributed to their action as intestinal antifermentatives. A fact that is too well known to need emphasis is, that frequently attacks of epilepsy may be diminished nearly fifty per cent. in frequency by treating the alimentary canal exclusively.

Duboisine, picrotoxin, cannabis indica, and belladonna should in no sense be considered of sufficient importance to attempt to combat epilepsy by any one of them alone. They are frequently of use as adjuvants to the bromides, particularly in combating some untoward symptom produced by the latter. Amylene hydrate, which was first recommended by Wildermuth,[3] has been found by Dunn [4] to be entirely useless, and even dangerous, in the treatment of epilepsy. This conclusion is substantiated by Umphenbach [5] and Drews,[6] who found that this drug greatly increased the mental confusion in epileptics and caused considerable disturbance of sleep. It should be dropped entirely from the therapeutics of epilepsy.

Osmic acid has likewise been shown to be of absolutely no use in the treatment of epilepsy. Sclerotinic acid has been tried by Bourneville and Bricon in twelve cases of epilepsy, and in some of these the frequency of the attacks was lessened.[7] It was noticed that some of the patients to whom the sclerotinic acid was administered decreased rapidly in weight. This fact alone would militate against its use in the treatment of this disease.

Of the non-medicinal ways of treating epilepsy, the eye treatment has received the most attention. All neurologists are keenly aware of the fact that epilepsy may be, and frequently is, excited reflexly and that not infrequently the source of this pathologic reflex is some error of refraction, or defect in the eye muscles, and that the correction of this faulty condition will be followed by the relief of the trouble which it caused. They are likewise aware of the fact that although attacks of epilepsy may have been excited originally by defective conditions of the eye, that not infrequently treatment of the eyes alone will not cure the disease, and this for two reasons in particular. First, the eye defect may have been merely the exciting cause in a patient predisposed to epilepsy. That is to say such a patient might have the epileptogenous areas of his brain brought into activity by many other factors, for instance, by fright, fatigue, overeating, over-heating, etc., and the relief of such exciting factors would not cure the disease, no more does the relief of the eye defect. In the second place, if a patient has had a number of epileptic attacks, that is, if the motor cells of the epileptogenous areas have been subject to a repetition of explosions, each succeeding one lessens the chances of recovery, and particularly do they lessen the chances of spontaneous recovery on the removal of the cause which excited the first attack. The cessation of attacks goes hand in hand with the improvement of nutrition of the cortical motorial cells, and all our efforts should be in that direction. Not alone the eye but all sources of peripheral irritation should be carefully and intelligently examined and re-examined. Especially should the highly specialized sense organs be examined and any departure from the *norm* should be labored with till it is overcome. After it has been corrected the physician will find that all his therapeutic resources are still necessary to combating the disease which unfortunately still continues to exist. It is then that the plan of treatment seeking the bettered nutrition of the epileptogenous areas should be employed to its full extent.

The eye plan of treatment of epileptics, even when looked at with a most charitable critical eye, does not deserve the laudations of most of its advocates. It can never be more than a factor in the treatment of the disease. If we should decide to treat epilepsy on the eye plan perhaps it would be best to have a symposium of medical men, each one of whom would combat the factor which he considered the important one. Then, when all are finished, the patient will recover in the hands of the physician who gives him iron, and arsenic and the iodides and other measures that will stimulate hæmatogenesis and tissue repair.

When one considers the unsatisfactoriness of the treatment of epilepsy and the futility of so many of the measures which are periodically lauded as having great and peculiar virtues, it is not surprising that most physicians are animated by a wholesome spirit of scepticism in approaching the trial or consideration of any newly recommended substance. A considerable number are advocated every year, but appeals for their recognition fall on deafened ears, and the freezing reception extended to them cuts them off at their very inception, and thus saves much useless work on the part of the physician and much harmful experience on the part of the patient. Occasionally, however, a plan of treatment is suggested that appeals to us in no uncertain way. One based on a laudable hypothesis, or one that involves no shrivelling of our intellect to understand how it may act, or one that has been tried by an observer who from his labors and reputation deserves to be heard, and who recommends it because he has seen it do good, and offers it to his fellow-workers without explanation. It is to such a plan of treatment that I wish to invite your attention.

About a year ago, Professor Flechsig, of Leipsic, published a short article on a new method of treating epilepsy which in his hands had given most gratifying results. It consists in administering opium in the shape of the extract or pill in large doses for a period of six weeks. The dose of opium in the beginning is from one-half to one grain, and this is gradually increased until the patient is taking fifteen grains or more per day, in doses of from three to four grains. The maximum dose is reached by the end of the first week. At the end of six weeks the opium is suddenly stopped, and for it bromide of potassium or sodium in doses of one-half drachm four times daily is substituted. After these large doses of bromide have been kept up for some time the dose is gradually decreased until the patient is taking less than two scruples per day. The sudden cessation of administering the opium and the exhibition of the bromide is quite essential.

Being cognizant of the fact that opium in small doses when combined with bromides is frequently of great service in lessening the severity of attacks of epilepsy the plan of treatment suggested by Flechsig appealed to me and I determined to give it a thorough trial in a large number of cases selected from private, hospital, and dispensary practice, and examine the results of such treatment at the end of one year. About fifty patients have been subjected to this plan of treatment. A few cases I shall detail, and content myself with presenting the results observed in the others in tabular form.

The twenty cases considered in the first table I had under almost daily observation, and the conclusions reached regarding this plan of treatment is based largely on the facts therein set forth. The sixteen cases considered in the second table I did not have under such

[1] Wiener Medical Presse, 1891, No. 21.
[2] Wratsch, No. 20, 1892.
[3] Neurol. Central., 1889, p. 451.
[4] Journal of Mental Science, October, 1891.
[5] Munch. med. Wochenschr., No. 4, 1891.
[6] Therapeutische Monatshefte, No. 10, 1890.
[7] Arch. de Neurol., xii., xiv., and xv., xvi., 1888.

TABLE I.

No.	Name.	Age.	Sex.	Duration of Epilepsy.	Frequency of Fits under Bromide Treatment.	Character of Attack.	Cessation of Fits after Opium.	Frequency of Fits after Relapse.	Remarks.
1	F. M.	14	Fe.	3 years.	Once a week.	Haut and petit mal.	3 months.	Once in 3 months.	Dispensary patient.
2	H. N.	22	M.	6 "	1 to 2 "	Haut mal.	5 "	1 a month.	Private patient.
3	M. S.	9	Fe.	6 "	1 to 3 "	Haut and petit mal.	5 "	No relapse.	Dispensary patient.
4	M. P.	21	M.	1 year.	2 to 3 "	Haut mal.	8 "	" "	" "
5	H. B.	16	Fe.	6 years.	6 "	Haut and petit mal.	2 weeks.	Every 4th day.	Private patient.
6	A. F.	22	M.	8 "	7 "	Haut mal.	6 "	1 a month.	Hospital patient.
7	J. N.	16	M.	9 "	9 "	Haut and petit mal.	4 "	1 a week.	" "
8	E. S.	23	M.	20 "	6 "	" " " "	7 "	2 a month.	" "
9	C. F.	27	M.	9 "	2 "	Haut mal.	8 "	Every 3 weeks.	" "
10	A. S.	26	M.	25 "	2 "	" "	1 week.	1 a month.	" "
11	L. M.	21	Fe.	7 "	1 "	" "	5 weeks.	2 a month.	" "
12	E. R.	20	Fe.	4 "	3 "	Haut and petit mal.	2 "	Once in 2 weeks.	" "
13	J. R.	27	M.	10 "	1 "	Haut mal.	4 "	" 3 "	Dispensary patient.
14	L. B.	15	Fe.	3 "	3 "	" "	7 "	" 2 "	" "
15	B. D.	24	Fe.	1 "	1 "	" "	5 months.	" 4 "	Private patient.
16	M. S.	28	Fe.	11 "	2 "	" "	5 weeks.	1 a week.	Hospital patient.
17	D. M.	21	Fe.	5 "	4 "	Haut and petit mal.	7 "	3 a month.	" "
18	E. H.	27	M.	7 "	2 "	Haut mal.	6 "	3 "	Private patient.
19	M. Mc.	19	Fe.	5 "	4 "	Haut and petit mal.	3 "	1 a week.	Hospital patient.
20	J. L.	17	M.	6 "	3 "	Haut mal.	1 month.	2 "	Dispensary patient.

TABLE II.

The following 16 cases have been under observation for four months only.

No.	Name.	Age.	Sex.	Duration of Epilepsy.	Frequency of Fits under Bromide Treatment.	Character of Attack.	Cessation of Fits after Opium.	Frequency of Fits after Relapse.	Remarks.
1	D. S.	48	M.	13 years.	2 daily.	Haut mal.	1 week.	4 a week.	Hospital patient.
2	J. K.	26	M.	12 "	4 a week.	Haut and petit mal.	No improvement.	.....	" "
3	W. D.	40	M.	20 "	3 "	" "	" "	.....	" "
4	J. L.	27	M.	8 "	1 "	Haut mal.	2 weeks.	1 in 2 weeks.	" "
5	G. Y.	38	M.	11 "	5 "	Haut and petit mal.	11 days.	2 a week.	" "
6	T. M.	64	M.	26 "	7 "	" "	6 days.	3 "	" "
7	S. H.	39	M.	14 "	3 "	" "	2 weeks.	3 "	" "
8	W. M.	50	M.	18 "	10 "	Petit mal.	17 days.	2 "	" "
9	J. O.	22	M.	10 "	2 "	Haut and petit mal.	10 "	1 "	" "
10	J. K.	26	M.	7 "	2 "	" "	3 weeks.	3 a month.	" "
11	J. W.	61	M.	22 "	3 "	" "	13 days.	1 a week.	" "
12	B. G.	38	M.	15 "	5 "	Haut mal.	No improvement.	.....	" "
13	W. H.	46	M.	6 "	2 "	" "	5 days.	2 a week.	" "
14	D. M.	45	M.	11 "	3 "	" "	15 "	1 "	" "
15	H. C.	55	M.	20 "	6 "	Haut and petit mal.	9 "	2 "	" "
16	J. D.	31	M.	17 "	3 "	" "	3 weeks.	2 "	" "

close surveillance. They were very old subjects and my principal desire in subjecting them to the treatment was to determine whether the results would militate against, or corroborate the results obtained in the first twenty cases. In a general way it may be said that the results were not so satisfactory.

A study of Table I. shows that all the cases with one exception (Case 5) were benefited. It further shows that in two cases (Cases 3 and 4) the fits have not returned. The time elapsed in these cases is, however, not of sufficient length to refer to them in any way as cured. And I wish to emphasize the point that, although the attacks have ceased, I do not consider them cured, and they are still taking four scruples of potassium bromide a day. In several of the cases the character of the attack after the relapse was frequently of a different nature than that before the attack. That is the family of the patient or the hospital nurse, as the case might be, would describe them as "mere fainting spells" and make light of them. I have observed, however, as time went on that these "spells" gradually become more severe as the number of attacks increase after the relapse. Another fact which I would point out is, that in every case, almost without exception, the maximum dose of opium was reached and persevered in with comparatively slight trouble. Some of the patients who were cognizant of what they were taking complained rather bitterly and rebelled, but particular attention to the bowels and a good deal of out-door exercise served to keep them moderately comfortable. Sometimes it was necessary to administer strong coffee to combat the drowsiness, particularly during the first week when the opium was being increased rapidly.

While the patients were taking opium there was no marked change in the frequency of the fits. Some of the patients had a lesser number, particularly toward the latter end of the six week's period, while others had them with customary frequency.

Notwithstanding the fact that no sinister results accompanied the administration of opium in such large doses, I feel it incumbent on me to say to any one who would apply this plan of treatment, that the most watchful and scrutinizing care is necessary, especially during the first weeks, until the patient becomes accustomed to the large doses.

The most satisfactory results were obtained in very chronic epileptics, and particularly those who were not responsive to large quantities of bromide. In epilepsy dependent on, or associated with, gross organic lesion of the brain the treatment seemed to give better results than in pure idiopathic epilepsy. By gross organic lesion I mean epilepsy associated with old cerebral hemorrhage and softening and epilepsy associated with defective development.

I can but state my convictions relative to this plan of treatment in the following conclusions:

1. The plan suggested by Flechsig is not a specific in the treatment of epilepsy.

2. In almost every case in which this plan of treatment has been tried there has been a cessation of the fits for a greater or lesser time.

3. A relapse generally occurs in a period varying from a few weeks to a few months.

4. The frequency of fits after the exhibition of opium is, for the first year at least, lessened more than one half.

5. The attacks occurring after the relapse are much less severe in character than those that the patient has been accustomed to having.

6. This plan of treatment is particularly valuable in ancient and intractable cases.

7. In recent cases of idiopathic epilepsy it cannot be recommended.

8. The opium plan of treatment is an important adjuvant to the bromide plan as ordinarily applied.

9. The opium acts symptomatically, and merely prepares the way for and enhances the activity of the bromides and other therapeutic measures.

10. This plan of treatment permits the use of any other substances which are known to have a beneficial action in epilepsy.

I will cite briefly the history of a few unselected cases taken from hospital, dispensary, and private case-books, showing the effect of the treatment. I may say that all of these patients were handled with bromides for a longer or shorter time previous to being put on the Flechsig plan.

Case I. Dispensary.—F. M——, female, colored, aged fourteen. Family history tubercular; personal history good. Never had convulsions when a child; was always bright, vivacious, and smart; talked early and walked early. First attack when eleven years of age; cause unknown; character of attack, haut mal.. Frequency of attacks about three a month and getting more frequent. Character of aura, headache for some hours. Physical condition, good; mental condition, backward; she has a great many evidences of mental deterioration. Head symmetrical; no other somatic evidences of degeneracy.

Put on opium treatment September 20th. Reached thirteen grains a day at end of first week. At this time took thirteen pills at one time and suffered from toxic effect, but recovered without difficulty. Put on kalium bromide, ʒ ss 4. i. d., November 1st. Patient reported once a week till January, then stopped for two weeks. Returned February 8th and said she had had a fainting spell, while the medicine had been stopped. Bromide in 20 gr. doses 4 i. d. continued. No attacks since that time. Result: one attack of petit mal in six months, Mental condition about the same.

Case II. Private.—H. N——, male, aged twenty-two, salesman. Maternal side of family neurotic heritage. Paternal great uncle had epilepsy. Attacks began when he was sixteen years of age. Cause, not attributable. Had one spasm when a child, caused by eating unripe fruit. Was bright mentally and strong physically, as a boy. Character of attack, haut mal. Time of occurrence, always at night. Frequency, in the beginning they occurred about once in six months; now they come once or twice a week. Mentally he is deteriorating, forgetful, depressed; cannot concentrate his mind. Physically not robust.

Put on opium treatment April 30th. Maximum dose, fifteen grains, reached in eight days, and continued till June 16th. No change in attacks in point of form or frequency while taking opium.

June 15th.—Substituted bromide of potassium, ʒ ij. per diem, for opium. Reports once a week.

November 28th.—Three attacks in succession the same night. Had not been taking medicine for five days.

December 18th.—Nocturnal attack.

March 27, 1894.—Reports one attack since December.

Result: Four attacks in nine months. Physical and mental improvement.

Case III.—M. S—— female, nine years of age. One sister died of hydrocephalus. She did not walk till two years of age, and began to talk when six. Attacks first began at the age of three years. They were then of the petit mal character, and gradually increased in frequency until her eighth year, when they were occurring once or twice a week. From her eighth year she has had both petit mal and grand mal. Mentally the patient is quite defective. Evidence of somatic degeneracy well marked.

Patient put on opium, gr. j., t.i.d. for three weeks; then on double the quantity for the next three weeks; then on triple the quantity for the next four weeks. Middle of November put on potassium bromide, 30 grains four times a day.

It is necessary to mention that this little patient was the only one of the entire number that developed symptoms of the opium habit. On substituting the bromides for the opium, such symptoms of the opium habit as diarrhœa, anorexia, restlessness, irritability, and sleeplessness showed themselves, but were easily combated with hydrotherapy and small doses of chloral. She has had no attacks for upward of five months. Mentally there is some gratifying improvement. She helps her mother about the house; can be trusted to go errands and the like. During the administration of the bromide she has had restoratives, such as iron and cod-liver oil, in such quantities as she could dispose of.

Case IV.—M. P—— male, twenty-one years of age; heavy drinker. One brother had attacks for upward of twelve years and recovered at the end of that time. One year ago after a heavy drinking bout he had an attack of pneumonia and while convalescing from this he had his first epileptic attack. After this they occurred two to three times a week, and both in the day and in the night. Has an aura starting from the stomach accompanied by cardiac palpitation. Mental condition good.

Put on opium August 22d and continued for six weeks. Then bromide in 30-grain doses four times a day. Result, no attacks since cessation of opium.

Case V.—H. B—— female, sixteen years of age. Mother died of tuberculosis. Had convulsions when three and a half years of age. Then was quite free from attacks till ten years of age. Talked and walked early and learned easily until her tenth year, when she had severe attacks of haut mal. Three or four months later she had a second attack and since that time they have increased in frequency. Concomitant with the increase in the number of attacks has been mental deterioration, so that now she is quite demented. Three years ago she had an attack of chorea, and while ailing with this, she had a left side hemiplegia which disappeared in about a fortnight. Her mind has been gradually getting weaker, and for the past six months she has had visual and auditory hallucinations. Always before an attack she complains that her eyes hurt her. Evidence of somatic degeneracy, such as stunted stature, torsus palatinus, over exposure of gums, defective lobulation of ears, crowding of teeth, broad, flat nasal arch very apparent. For the past six months she has had at least six attacks a week, for two or three hours after an attack she is entirely *non compos mentis*.

Put on opium January 10, 1894, and for the next six weeks while on opium the attacks were not so frequent as formerly.

February 28th.—Put on kalium bromide. No attacks for two weeks, since then an attack about every fourth day.

Case VI.—A. F——male, aged twenty-two, of neuropathic heritage. First attack of epilepsy when fourteen years of age. Attributing cause, a severe fright. The fits occurred about every three weeks for the next four years. Since that time the attacks have been getting more frequent, although he has been under continual treatment. In the month previous to the beginning of the opium treatment he had twenty-seven attacks —seventeen day attacks and ten night attacks, all of the haut mal type. Patient put an opium May 25, 1893.

The following is a record of his attacks while taking the opium: May 25th, six attacks; June 10th, two attacks; June 11th, one attack, followed by a maniacal outbreak. Rectal injection of 30 grains of chloral hydrate and 60 grains of bromide of potassium, hypodermatic injection of $\frac{1}{100}$ grain hyoscyamine hydrobromatis, and ice cap to the head.

June 12th.—Patient rational.

July 18th.—Opium stopped and given instead bromide of potassium, 30 grains four times a day.

August 27th.—Two "fainting" spells.
October 24th.—Petit mal
October 25th.—Petit mal.
November 3d.—Petit mal.
December 2d.—Two attacks of petit mal.
January —No attacks. Patient left the hospital.

CASE VII.—J. N——, male, sixteen years of age, no family history. Has had fits since seventh year. Cause, severe fright. The form that the attacks take is variable, occasionally they are of procursive type, sometimes petit mal and sometimes very severe attacks of haut mal. In the month preceding the opium treatment he had thirty-eight fits. Mentally, patient is entirely demented. Opium stopped and bromides substituted July 25th.

The following is the record of attacks for the remainder of the year: August, four attacks; September, one attack; October, three attacks, all of petit mal type; November, five attacks; December, three attacks, one of the haut mal type. Patient transferred to the asylum.

CASE VIII.—E. S——, male, twenty three years of age. Negative family history. Has had fits since childhood. Attributable cause, fright. Mentally the patient is morose, stupid, wrathy, and scarcely ever speaks unless angered. In month previous to establishing the opium treatment he had twenty-four attacks. Opium stopped July 25th and bromides substituted. The following is the record: September, 1893, two attacks; October, two attacks; January, 1894, two attacks; February, one attack; March, three attacks.

This patient has undergone a remarkable mental change for the better, is now cheerful and bright and works continually about the ward.

CASE IX.—C. F——, male, twenty seven years of age. Negative family history. Has had fits since he was eighteen years of age. At first they occurred at night, but for some years past he has had both night and day attacks. He has about eight attacks a month, in each one of which more than an hour elapses before he recovers consciousness. Mentally the patient is deranged, and spends most of the time praying. He received the opium in the regular way and was put on bromides August 2, 1893. He suffered no attack up to October 1st, when he was transferred to the surgical ward that he might be operated on for a malignant growth of the cheek. Since then he has had a few light attacks. Mentally he is greatly improved.

CASE X.—A. S——, male, twenty-six years of age. Paternal uncle has epilepsy. This patient had convulsions when a child after an attack of scarlet fever. When ten years of age had his first severe fit. He has been under almost continual treatment in this country and Germany since his boyhood, but the attacks have become more frequent and severe. Sometimes he will have three or four attacks in a day and then will not have a repetition for a week. Most of the attacks are in the day. Mentally and physically the patient is in fairly good condition. Patient put on opium June 10th and stopped August 2d.

The record from that time is, August 6th, two "fainting" spells; November 28th, two attacks of petit mal; February 5, 1894, one haut mal; February 10th, petit mal; March 7th, petit mal.

In conclusion it gives me great pleasure to acknowledge the many valuable suggestions received from Dr. C. L. Dana relative to the prosecution of this trial, and to thank him for placing at my disposal the extensive material of his clinic at the New York Post Graduate Medical School.

To Dr. E D. Fisher my best thanks are due also for allowing me the privilege of his wards at the Alms House. The valuable and untiring aid rendered me by my successive house physicians, Drs. Hedges, Grandy, and Worth, at the Hospital for Nervous Diseases is gratefully acknowledged.

43 WEST THIRTY-NINTH STREET.

A RARE CASE OF SCLERO CORNEAL STAB—GREAT LOSS OF VITREOUS — COMPLETE COLLAPSE OF GLOBE — INTRA-OCULAR HEMORRHAGE — TREATMENT WITHOUT ANY PAIN—GLOBE SAVED.

BY DANIEL R. AMBROSE, M.D.,

NEW YORK.

THIS case is interesting not only from its rare character and result, but also from the novel, yet very simple, treatment. In his chapter on "Wounds and Injuries of the Sclerotic," Soelberg Wells says: "When the wound is very extensive and a large portion of the contents of the globe has escaped, and there is no hope of restoring any sight, it is better to excise the eyeball at once, more especially if it is to the patient a matter of great moment (as among the poorer classes) to be cured as soon as possible, and to be free from further inflammatory attacks." [1]

In a large hospital and dispensary practice, extending over a period of fifteen years, I have never seen an incised wound of the eye so deep, extensive, and apparently hopeless as the following:

M. W——, aged twenty nine, butcher, came to my office, Sunday afternoon, February 7, 1886, with his right eye covered with cloths, over which was tied a handkerchief. After removing these the lids were closed and sunken as in a case of extreme phthisis bulbi. After separating the lids the eyeball appeared not more than one fourth its normal size, so great was the collapse from an incised wound commencing on nasal side of sclera, apparently one-fourth of an inch from the limbus conjunctivalis, near the horizontal diameter, and extending forward and slightly upward to one eighth of an inch from the temporal limbus conjunctivalis, cutting through sclera, choroid, and retina, and extending through cornea, iris, ciliary processes, zonula, and splitting or displacing the lens, which in all probability escaped with the gush of the vitreous. The iris was divided throughout the entire extent of the corneal portion of the wound. There is intra-ocular hemorrhage, and very probably detachment of the retina. A portion of vitreous had lodged in the scleral portion of the wound, occupying about one fourth of its extent, which I did not disturb. The iris prolapsed through the entire length of the corneal portion of the wound, and with the convex surface of Daviel's spoon I gently pushed it back within the corneal margins. He is a strong, muscular man, but very pale and nervous from anxiety, and said that while in a stooping position gathering up the entrails of a hog, a drunken companion, who was scraping down an adjoining animal with a knife, recklessly thrust the point of the instrument upward into his eye, with the above result.

In consequence of the sudden and unexpected blow between the involuntary contractions of the lids, these escaped entirely and the eyeball received the whole force of the blow. My first thought was to close the scleral portion of the wound with a suture. My second thought was not to do so. Why? No one could surely predict firm union of the corneal margins in such an extensive wound within forty-eight hours. And in a strong man like this, in such a state of nervous depression, there must surely follow within forty-eight hours, and probably within twenty-four hours, a vigorous reaction, with a reformation of vitreous and aqueous humors, which, in rapidity and force, would cause an intra ocular pressure similar to that in glaucoma fulminans, which a so extensive corneal incision in almost the horizontal diameter, where little or no support could be obtained from the lids, and with but a weak adhesion, would hardly be able to resist; and if the corneal adhesion, which I hoped to obtain, should give way, all would be inevitably lost.

I told the patient that he might be prepared for total loss of sight in that eye, and that there was a strong probability that the wounded eye would have to be removed, but at the same time I hoped, with care and regular at-

[1] Page 214, Soelberg Wells.

tention to be able to save the eyeball. By leaving the scleral portion of the wound open as a safety-valve, and giving firm but comfortable support to the cornea with compress and bandage, I hoped to prevent a reprolapse of iris and obtain primary union of the corneal portion of the wound and save a globe which would disfigure but little, if any, and save him the annoyance and expense of an artificial eye every eighteen months or two years. So I carefully and gently cleansed the eye with soft cloths and lukewarm water, put in two drops of a four-grain solution of atropine, and repeated this four times at intervals of about five minutes, and then applied a firm but comfortable compress and bandage, and sent him home with an injunction to send for me if he had any pain.

The first layer of cotton in contact with the eye was saturated with glycerine. About 7 P.M. he sent a boy for medicine. I did not send anything, but went to his rooms in a tenement-house, where I found him sitting with a bright lamp directly in front of him, with a roomful of people, who were talking rather excitedly from the effects of stimulants. All, except his own family, were immediately directed to leave the room, and he was instructed to have the lamp behind him and to keep quiet. He said he did not have any pain, but only a slight sore feeling and feared it might get worse during the night, and therefore sent for medicine to have it ready in case of necessity. After he had been quiet about half an hour he said he felt quite comfortable, so I gave him nothing and did not disturb the bandage, and, after directions to sleep with his head and shoulders well raised, I left him.

February 8th.—Twenty-four hours after his first visit he returned to my office, a distance of nine blocks, and said he had passed a very comfortable night, and had not had the slightest pain or sore feeling since I left him. After cautioning him to keep his eyes closed I removed the dressing. The eyeball had filled out considerably, but not quite equal in size to the fellow-eye; the lids are natural, there not being the slightest appearance of inflammation at the margins. After gently washing the lids with a soft cloth and lukewarm water, and slightly pulling down the inner corner of lower lid and dropping a four-grain solution of atropine four times, about five minutes apart, into the eye, I reapplied compress and bandage as before.

February 9th.—Returned and says he has not had any pain, and rested quite comfortably the night before; dressing removed; the eyeball has filled out equal to its fellow, and the lids appear quite natural. Eye gently washed; atropine, compress and bandage as before.

February 10th.—Has had no pain, though the eye is now fuller and more prominent than its fellow, and margin of the upper lid is slightly red and swollen. After directing him to make no effort to open his eyes, I gently and slightly raised the upper lid and was much gratified to find thorough primary corneal union all along the line. The vitreous which had lodged in the scleral wound has entirely disappeared; treatment the same.

February 11th.—The upper lid is more swollen than yesterday, but he says he has not had the slightest pain; treatment the same.

February 12th.—The swelling of lids is more extensive than yesterday, and they bulge forward considerably, are red and glazed and have all the appearances of a severe panophthalmitis in full bloom, except the pain, which is entirely absent; treatment the same. For the last two days the cotton compress has been quite wet with water, but only a trace of muco-pus.

February 13th.—Has had no pain. Appearances the same as yesterday; treatment same.

February 14th.—Has had no pain. Appearances about the same as yesterday, except that the lids do not appear quite so tense, and there is a little more pus to be seen when the margins of the lids are separated; treatment the same. Without recording the monotonous daily details, from this time on there was a gradual subsidence of the inflammatory action, without any pain and without the slightest change in treatment. It was a noticeable feature of this case throughout the treatment that there was less suppuration than I had ever before seen in an inflammation of such a violent degree. Nothing occurred worthy of special note until February 28, 1886, when, the eye having much improved, the swelling and redness of the lids having entirely disappeared, but there being still a slight degree of conjunctivitis, with marked injection of the superficial and deep ciliary vessels extending all around the cornea, but most marked near the seat of the scleral wound, he attended church, which had not been warmed, at 7 A.M., while the thermometer, as reported by morning papers, was at ten degrees above zero. While at his devotions he felt a chill run through his body, and his eye felt as though something was in it; he said he thought a portion of the cotton compress had gotten into the eye. I removed the dressing, but there was nothing in the eye, and the symptom he described was caused by increase of conjunctivitis brought on by cold while at church. I then directed him to remain in his room until the weather became warmer, and there I gave him the same daily attention without the slightest change in treatment. This increase of conjunctivitis, with its accompanying symptom, as though something was in the eye, was relieved in forty-eight hours; but I confined him to his rooms and continued the same daily treatment for one week until the cold wave had passed and the weather had become milder.

March 15th.—He can distinguish a white shirt bosom, a white hat with a black band around it, and my hand at about three feet, but he cannot count fingers at any distance. As he had to return to work and would be daily exposed to a varied atmosphere, and also dust, and as the injection of the deep and superficial ciliary vessels continued, I thought it safer to continue the treatment at intervals of every second day until May 10, 1886, when the bandage was removed and the eye protected with a light pad of cotton, over which was placed a paste-board covered with black silk.

The small margin of the scleral wound, of one-sixteenth of an inch beyond the ciliary zone, healed much more quickly and kindly than that part running directly through the ciliary zone, which healed very slowly and was long marked by the injection of the superficial and deep ciliary vessels. The paste-board with dark silk and slight pad of cotton was, in consequence of his occupation and frequent exposure to variable temperature, continued until June 26, 1886, when all appearance of inflammation and irritation about the eye had entirely disappeared, and the ciliary vessels, both shallow and deep, had regained their normal condition, and there were neither perceptible bulging nor depression of the sclera, one of which is almost the invariable result of wounds extending through the ciliary zone. The scleral portion of the scar, which can be easily seen, measures six thirty-seconds of an inch from the limbus conjunctivalis. The direction of the line of the incision runs from a point on the nasal side of the sclera six thirty-seconds of an inch from the limbus, and about five degrees below the horizontal diameter, and extends to a point on the cornea one-eighth of an inch from the temporal limbus conjunctivalis and about five degrees above the horizontal diameter. There is anterior synechia to both lips of corneal incision throughout its entire length, except a small portion at the lower margin of the pupil about the size of the head of a small pin, which is perceptible when under the influence of atropine. The globe appears of full size and good shape, but the cornea is flattened.

During a large dispensary and hospital service extending over a period of more than fifteen years I have seen a great variety of injuries and deformities of the cornea, but have never before seen a case like this resulting from a wound, the cornea markedly flattened, yet apparently equal in all of its diameters to that of the uninjured eye.

Neither can I remember of ever having read of such a case. [Flattening of the cornea without any diminution of its diameters may, and often does, exist as the result of old age, and may be caused by glaucoma as the result of long and marked increase of the intra ocular pressure, which, while it causes the globe to approach the spherical shape, stretches the ciliary nerves which run between the sclerotic and choroid, and paralyzes them to a greater or less degree.]

The flattening of the cornea in this case is due to one, or both, of two causes: 1st. The oblique course of the knife through the ciliary region not only divided the ciliary muscle and ligament, but also some of the ciliary nerves, causing paralysis of the former. [Although the system of ciliary nerves are mainly derived from one (the ophthalmic) of the sensory branches of the fifth pair, it receives motor power, through the medium of the ciliary ganglion, by a branch derived from the third nerve.] 2d. The extensive anterior synechia along both lips of the corneal incision very probably exerts some influence in producing this flattened condition of the cornea. There is a slight depression without any discoloration along the line of the scleral portion of the scar. This reminds me of a ditch which has been filled up almost to the surface with the surface portion of the soil through which it had been dug in consequence of the long neglect of a lazy farmer.

What does it indicate? That union by retina, connective tissue, and conjunctiva has taken place; there being no direct adhesion of the edges of the sclera. Of what importance is that? Remember the last question, for under the head of Suggestions this very shallow ditch will be again alluded to and its importance will there be pointed out.

November 6, 1886.—He can distinguish my hand from one to three feet, but he cannot see fingers at any distance. The image of the hand, or other objects, is, after a few seconds, lost. It may be asked, Why not perform an iridectomy and give this man a larger pupil and more light in that eye? At first this may seem very plausible, but very probably there is detachment of the retina to a considerable extent (and it would be miraculous if there were not some degree of detachment of the retina after such a sudden evacuation of almost, if not quite, the entire contents of the vitreous chamber), and an iridectomy, at best, could give very slight, if any, improvement where there is detachment of the retina; while the risk of starting an irido-choroiditis by doing an iridectomy where there is such an extensive anterior synechia, and very probably degeneration of the iris, which might not only destroy the faint vision he now has but also cause atrophy of the globe, is considerable. Therefore, for the best interest of the patient I deem it wiser to let well enough alone.

Dr. J. F. Gray saw this patient with me during and at the termination of the treatment, June 16, 1888. It is now over two years and four months since the accident occurred, and there is not the slightest symptom of irritation in either eye. The tension is normal, being the same as that of the fellow eye. The horizontal diameter of the right, or injured cornea, from limbus to limbus is fourteen thirty-seconds of an inch, while the corresponding diameter of the left cornea is fifteen thirty seconds of an inch. The vertical diameter of the left cornea from limbus to limbus is fourteen thirty-seconds of an inch, and the vertical diameter of the right or injured cornea is also fourteen thirty seconds of an inch. Measurement of palpebral fissures directly over the centres of pupils, while patient is looking straight forward, shows the following results: When the measure approaches the left eye, as near as possible without contact, he can, after a few trials, control the involuntary contractions of the lids, and then, while looking straightforward, the fissure over the centre of the pupil is fourteen thirty-seconds of an inch; but after several trials, as with the left, the lids of the right, or injured eye, in spite of strong efforts to control them, will contract as the measure approaches, and during this contraction the palpebral fissure of the right, or injured eye, is eleven thirty-seconds of an inch—three thirty seconds of an inch less than that of the good eye. But when I wave my finger up and down several times commanding him to follow the finger with his eyes and look at nothing else, and then suddenly bring my finger to a rest on my right eyebrow, I can then approach his injured eye with the measure without any apparent contraction of the lids, and then the palpebral fissure of that eye is twelve thirty-seconds of an inch over the centre of the pupil—or only two thirty seconds of an inch less than that of the good eye. This temporary exercise of the eyes and mental diversion removed that nervousness shown a few moments before in the injured eye, and which had caused the contraction of the lids as the measure approached them, in spite of his efforts to control them. I remarked that the lids of the injured eye were not much nearer to each other than those of the good eye, to which his wife replied, "Oh! I didn't think anything of that, for I have always noticed that the lids of the right eye were a little contracted;" and the patient said, "That is so, the lids of the wounded eye have been contracted almost as long as I can remember." According to these statements the result is better than I at first supposed. He has perception of shadows at two feet. There is a white film occupying the space of the small pupil.

October 25, 1890.—It is now over four years and eight months since the accident occurred, and the eye remains in the same condition as noted June 16, 1888.

November 26, 1893.—It is now seven years and nine months since the accident occurred, and his wife says, when he remains sober his eye looks as well as it did June 16, 1888.

In this case no antiseptic, except cotton saturated with glycerine as an external dressing, was used. Several years ago I obtained primary union in cases not favored with good hygienic surroundings where the flesh had not only been torn, but dragged from its attachment by machinery and the glancing force of some instrument, by gently cleansing and carefully adjusting the related parts and dressing the wound with cotton saturated with glycerine and the patient's blood.

Under what more unpropitious circumstances can it be imagined that an eye will ever be operated on than existed in the above case, which was cut in the roughest manner possible, with a coarse and filthy knife, and almost directly through the horizontal diameter of the cornea, where the least support could be obtained from the lids, dividing it into two equal parts; and in the foul, moist, and comparatively warm atmosphere of a slaughter-house for hogs, reputed the most filthy of all animals, whence he had to go over half a mile—twelve and a half blocks—before his eye was cleansed and dressed.

There was no suppuration within the eye nor in the margins of the wound. The conjunctiva was the only tissue from which pus could be seen to issue, and it was markedly less than I had ever before seen in a case of so violent reaction, and this yielded in due time to atropine and unadorned cleanliness. And he did not have pain enough throughout the whole time of treatment to deprive him of one moment's sleep. The mouth of the scleral wound was daily exposed to pus from the conjunctiva for about two weeks, but this gave me no anxiety after I saw firm corneal union had taken place, because a full and boiling over capsule effectually prevented the entrance and accumulation of any foreign liquid.

The earnest attention of the ophthalmic surgeon is requested to the last sentence above, for in the class of cases to which I believe much good may be done by the timely use of the operation which will be described further on, there will always be some degree of conjunctival suppuration, and however much he may be impressed with its utility in relieving intra-ocular tension, and in promoting free circulation through the eye, and thereby preserving its nutrition, he may still be deterred from giving his patient the benefit of it for fear that the con-

junctival pus might enter the scleral incision and accumulate within the eye, and more than counteract all the benefit that might otherwise be derived from the operation. My chief anxiety, therefore, in this case, was that the scleral opening might unite before the inflammatory reaction could be checked, or had spent its force, and in consequence of its speedy union the circulation through the globe might become obstructed, and its nutrition, as well as that of the cornea, become impaired, and thereby defeat the purpose for which I had intentionally left the scleral portion of the incision open.

The favorable features of this case may be fairly attributed to simple cleanliness, firm and comfortable support to the cornea, atropine, and more than all else, to the continued relief of intra-ocular pressure until the inflammatory reaction had spent its force. The intra-ocular pressure was kept continually relieved by keeping the scleral portion of the wound continually open as a safety-valve, free circulation through the globe being thereby permitted, and its nutrition, as well as that of the cornea, preserved, and suppuration within the eye prevented, and lessened to a considerable degree from the conjunctiva. It may be supposed that these happy results were due to the age and vigor of the patient and to an unusual vitality of the tissues of his eye. But to such an hypothesis I would reply that the best results I have had after operations for cataract, or seen in the practice of others, have been in elderly and moderately emaciated people who did not seem to have vigor and vitality enough to get up a forceful reaction; while the worst results that I have witnessed have been in stout and vigorous-looking people. It should, however, be borne in mind that an opposite extreme may exist where the vitality is so low and the reparative lymph so deteriorated that union of the corneal incision after extraction may not take place, and then may follow sloughing of the cornea, panophthalmitis, and atrophy of the globe, in spite of all that can be done.

For many years I have watched with much interest the results of cataract extraction, in the practice of others as well as my own, and have seen in several cases, after the most skilful extraction by different operators and the most careful after-treatment, the eyelids become swollen, red, and glazed, with much pain in the globe and radiating along the course of the supra-trochlear, infra-trochlear, nasal, and temporo-malar nerves; and in spite of the careful use of all known remedies the patient would pass sleepless nights and wearisome days, and the sight, which was obtained immediately after the operation, and which so cheered the despondent mind, gradually, and sometimes rapidly, become dimmed until no object could be distinguished, and his hopes sink away never to return. I do not know anything, except the dying, which has caused me more melancholy feelings than the watching of these unfortunate cases.

Some years ago it occurred to me that something beyond the routine treatment—some secondary operation which would relieve tension, and keep it relieved until the inflammatory reaction had been checked, or had spent its force—should be tried early in these violent cases; but operative procedures, except paracentesis of the cornea, in the acute stages of such cases, have been objected to by some of the most eminent ophthalmic surgeons, and countenanced by none that I am aware of, on the ground of increased irritation which would inevitably follow. This objection is perfectly valid and well taken so far as the old and long used method of relieving tension—by paracentesis of the cornea—is concerned.

For, although by the use of cocaine complete anæsthesia of the conjunctiva and cornea may be obtained, and the former rendered insensible to the grasp of the forceps, and the latter to the cut of the knife, the iris is but little, if at all, affected by it; and although an expert surgeon may avoid tearing or pricking the iris he cannot prevent it bulging forward when the aqueous escapes. And this slight displacement, and possibly rubbing against the knife of so sensitive a tissue as the inflamed iris, must cause some degree of irritation. However, if the relief of tension temporarily obtained by paracentesis of the cornea could be safely made continuous at the surgeon's will, without the necessity of repetition, it might in a great measure compensate for the irritation produced by it. But, unfortunately, there is no way at present known by which that desirable result can be safely accomplished. The corneal incision will primarily unite within twenty-four or forty-eight hours; the inflammatory process of the iris and choroid is not checked; the aqueous and vitreous humors, which are incompressible substances, rapidly reform; the capsule, if possible, is still further distended until it has perhaps lost all of its resiliency, and this factor in the promotion of the intra ocular circulation is lost; the circulation becomes obstructed and consequently the nutrition becomes impaired, and then follows the formation of pus within the eye. Leeches, ice-cloths, warm douches, and other remedies, have for many years been used to check this inflammation, and when it is of a mild nature and of but moderate force are sufficient to subdue it. But I have seen several cases under the care of different surgeons which, after the timely and assiduous application of the usual remedies, were but slightly, if at all, relieved by them; the inflammation continued until suppuration within the eye occurred; the sight became greatly impaired; nay, totally lost. To meet and prevent such emergencies I would suggest sclerotomy before any destruction of tissue had taken place, if possible. It is not here claimed that sclerotomy is a new operation, for, on the contrary, it is quite ancient; but the method, purpose, and regard for neighboring parts, as will be further on described, I have never seen nor even heard suggested.

Under the head of "Treatment of Glaucoma," Stellwag says: "The paracentesis of the sclera, moreover, in connection with the emptying of a portion of the vitreous, has been recommended for a long time as a means of lessening the hardness of the globe (Mackenzie). Since, however, the technical performance of the operation was not adapted to produce a permanent relaxation of the sclerotic, it could only obtain transient, and therefore unsatisfactory results." Its union with the iridenkleisis (Critchett, Coccius) has theoretically very much to be said for itself, but is to be avoided on account of favoring cystoid cicatrices, and subsequent threatening irritation. The proposal to draw out the iris very much in iridectomy, in order to rupture the zonula, and thus to establish a connection between the vitreous and aqueous humors (Coccius), should find few friends, in consideration of the dangers which can accrue to the nutrition of the lens, and even of the entire globe, from a partial rupture of the ciliary body."[1]

From the above it may be seen that, in addition to the fact that the operator "could only obtain transient, and therefore unsatisfactory results" for one purpose for which the paracentesis of the sclera had been employed, there was also another important cause why the operation had been followed by not only unsatisfactory results, but also even worse, by its "favoring cystoid cicatrices and subsequent threatening irritation," and "in consideration of the dangers which can accrue to the nutrition of the lens, and even of the entire globe, from a partial rupture of the ciliary body," viz., that the paracentesis of the sclera had been done through the ciliary zone.

Suggestion 1—Method of Operating.—The patient having been placed on his back and anæsthetized, the surgeon, with fixation-forceps, grasps a fold of conjunctiva near the cornea, midway between the external and inferior recti muscles, and gently turns the eye downward and slightly outward. An assistant raises the upper lid with his finger. A thin Graefe knife, well sharpened and thoroughly cleansed, and with its cutting edge directed toward the posterior extremity of the eye, and its sides parallel with the longitudinal axis of the globe, so as to guard as much as possible against cutting any of the ciliary nerves, is inserted in the point midway

[1] Stellwag: Fourth edition, p. 318.

between the superior and internal recti muscles and five thirty seconds of an inch from the limbus conjunctivalis, and passed directly through all the coats to the vitreous, the blade being pushed inward only far enough for its point to pass through the retina, lest damage be done to the vitreous, when the incision is extended backward six thirty seconds of an inch. The length of the scar in the above case from the limbus conjunctivalis backward on the sclera is six thirty-seconds of an inch, and the posterior two thirty seconds of an inch of the incision healed very much more rapidly and kindly than the anterior four thirty seconds of an inch of the scleral portion of the wound did; and this fact indicates that in the horizontal diameter four thirty seconds of an inch from the limbus backward cover all those sublime structures lying within the ciliary zone, the wounding of which by accident or design has always disappointed the hopes of the surgeon and terminated so disastrously to the patient.

Argument.—Gray says: "The larger processes are each about one-tenth of an inch in length and hemispherical in shape, their periphery being attached to the ciliary ligament and continuous with the layers of the choroid; the opposite margin is free and rests upon the circumference of the lens. . . . The ciliary muscle . . . forms a . . . circular band, about one-eighth of an inch broad, on the outer surface of the fore part of the choroid. It consists of two sets of fibres, radiating and circular. The former . . . arise at the point of junction of the cornea and sclerotic, and, passing backward, are attached to the choroid opposite to the ciliary processes. The circular fibres are internal to the radiating, . . . and have a circular course around the insertion of the iris."[1] Of the sclerotic, Gray says: "In front the sclerotic is continuous with the cornea by direct continuity of tissue, but the opaque sclerotic overlaps the cornea rather more on its outer than on its inner surface." Of the cornea, Gray says: "It is not quite circular, being a little broader in the transverse than in the vertical direction, in consequence of the sclerotic overlapping the margin above and below."[2]

From this eminent authority it will be seen that one-eighth of an inch from the corneo-sclerotic junction extending backward covers those very important parts lying within the ciliary zone; and from the last quotation that the cornea is "a little broader in the transverse than in the vertical direction, in consequence of the sclerotic overlapping its margin above and below." Gray says the eyeball in its antero posterior diameter is "about nine-tenths of an inch," which, reduced, is equal to $\frac{28\frac{4}{6}}{32}$ of an inch. The average height of the normal cornea from limbus to apex, measured in the horizontal diameter, from thirty to forty years of age, is, so far as I have examined, about $\frac{2\frac{4}{6}}{32}$ of an inch; while at about sixty years of age it is about $\frac{2\frac{5}{6}}{32}$ of an inch. In the following estimate I will calculate from the greater height because the shortening of the eyeball in old age is due, so far as is at present known, solely to the flattening of the cornea.

Therefore $\frac{28\frac{4}{6}}{32} - \frac{2\frac{4}{6}}{32} = \frac{26}{32}$ of an inch, which represents the average length of the eyeball of the adult from the corneo scleral junction to its posterior end. Now from $\frac{26}{32}$ take $\frac{5}{32}$ of an inch in the location proposed for this operation, and there will remain $\frac{21}{32}$ of an inch; at the point of five thirty-seconds of an inch from the limbus backward, the scleral incision begins and extends backward six thirty-seconds of an inch and then there will remain fifteen thirty seconds of an inch of the posterior part of the eyeball, or more than half of the twenty-six thirty seconds of an inch, which represents the average length of the eyeball from the corneo-scleral junction to its posterior extremity; and therefore the posterior extremity of the incision will be above the equatorial diameter of the vitreous chamber when the patient is on his back. Under no circumstances should the knife be passed into the vitreous chamber at a point less than five thirty-seconds of an inch from the limbus conjunctivalis, except for the removal of a foreign body.

The incision made as above described, will not mutilate the iris, ciliary muscle, ligament, processes, or zonula, all of which should be carefully avoided.

In the location above described the incision, when the patient is lying on his back, is above the equatorial diameter of the vitreous chamber; and when lying on the side of the operated eye, as, when not otherwise directed patients instinctively and almost invariably do, the incision will be above the vertical diameter; and when in the erect position it will be above the horizontal diameter. In either of these positions which the patient is most likely to assume, and to which by special instructions he should be confined during treatment, the opening is always above the corresponding diameter of the vitreous chamber, and excessive leakage cannot occur even should the vitreous have degenerated to a liquid condition. While at the same time the open incision permits sufficient leakage of the constantly forming serous vitreous, caused by the inflammation, to prevent increase of intra-ocular pressure, and thereby not only preserves the resiliency of the capsule, but also permits free circulation through the globe and preserves its nutrition as well as that of the cornea until the inflammatory action is checked, or has spent its force. The scleral margins will not unite directly, and when treated by compress and bandage, as further on directed, the opening through all the coats will remain slightly ajar, and prevent its closing too soon by retina, connective tissue, and conjunctiva. Should this open suggestion excite the amazement of the reader he may restrain his astonishment and bear in mind that the location designated for the incision is, from its complete covering by the upper lid under ordinary circumstances, but more especially when the eye is turned upward, as patients involuntarily do when there is much inflammation, almost if not quite as secure from the atmosphere as though it were a subcutaneous tenotomy. As soon as the incision is completed, carefully remove forceps without making any pressure on the globe, drop in atropine on inside of lower lid, cleanse and close the lids, and apply a clean soft cloth saturated with vaseline or pure glycerine, and carefully apply compress of clean cotton by filling up the inequalities about the orbit until the cotton is well raised above the supraorbital ridge, and over this apply firmly, but comfortably, a flannel bandage one and a half inch wide and four yards long, carrying a layer of bandage over the operated eye four times, and pin it carefully that it will not slip. When compress and bandage are carefully applied, they are comfortable and almost as firm as a plaster-of-Paris dressing, and will remain so for twenty-four hours, when they should be removed, the eye gently bathed with soft cloth and lukewarm water, and fresh dressings applied. The patient should be directed to lie with head and shoulders elevated at an angle of thirty or forty degrees.

The advantages claimed for this operation, when performed within the prescribed limits, purposes, and after-treatment, are: 1. Quick relief of pain. 2. Instead of increasing irritation it will relieve that which already exists. 3. It will relax tension and permit free circulation through the globe. 4. It will preserve the nutrition of the globe and cornea more than any other remedy at present known.

From the history and result of this case I believe three valuable lessons may be learned.

1. That in extensive incised wounds of the eyeball, even when the sclerotic is involved, and when a "large portion of the contents of the globe has escaped and there is no hope of restoring any sight," even "among the poorer classes," the surgeon should not at once jump to the conclusion that the destructive operation of enuclea-

[1] Gray: Eleventh edition, pp. 810–812. [2] Ibid., pp. 806, 807.

tion of the eyeball is inevitable, but he should by measures, not necessarily drugs, reasonably adapted to the circumstances of the case, endeavor to at least preserve the globe. When the globe is preserved without any irritation, although the sight may be lost, it is far more comfortable and economical for the poor man than an artificial eye, which has to be removed, cleansed, and reinserted every night and morning, and renewed every eighteen months or two years; to say nothing of the irritation often caused by an improperly fitted artificial eye and consequent atrophy of conjunctiva. Unless there be ciliary irritation long after the inflammation of the globe has disappeared, the danger of sympathetic ophthalmia, according to my experience, has been largely exaggerated.

2. That the surgeon should not waste time in a severe case, except it be syphilitic, in the delusive effort to cure suppuration in the eye with drugs, and especially if the patient be one of "the poorer classes," to whom it is a matter of great moment to be cured as soon as possible," and with the greatest amount of preservation of his natural organ.

3. That if so good a result can be obtained in a case with the cornea split into two equal parts, and under such unfavorable conditions, by the aid of a sclerotic safety-valve, it is reasonable to hope for far better results under more propitious circumstances where the surgeon may perform a timely sclerotomy in a location where neither the cornea nor any of those important parts lying within the ciliary zone can be injured.

Suggestion 2.—To mention sclerotomy at any part where the instrument must enter the vitreous chamber as a probable cure for glaucoma in the face of its past history, and of what some of the most eminent men in the medical world have written about it, and especially at an age when there is an operation for glaucoma which has been in unrivalled use for about a quarter of a century, and which has in many cases given very fair results, may appear like a reckless suggestion. In presenting its claims to the profession it will therefore be needful to compare its advantages and disadvantages with those of the operation now in use, viz., the broad paracentesis of the sclera through its most anterior zone into the aqueous chamber, combined with an iridectomy. The advantages of the last-mentioned operation are: 1. That the instrument pierces only the anterior scleral zone and does not enter the vitreous chamber. 2. When early and skilfully performed it has in many cases given very fair results, that is, complete relief of pain and a fair amount of vision. Its disadvantages are: 1. That it necessitates the destruction of a large portion—about one-fifth—of the iris; not because the destruction of this tissue is essential to the cure of the disease, but because of the danger of its prolapse if not destroyed, and the difficulty of restoring it when prolapsed, and its great liability to lead to dangerous irritation. 2. Its location is not only favorable for the prolapse of the iris when a large portion of it is not excised, but even after such excision the margins of the wounded iris are very liable to be caught in the lips of the scleral incision and lead to dangerous and irreparable irritation. 3. The excision of the segment of iris, as is required in its performance, close up to its ciliary attachment, may, in the hands of an inexpert operator, cause a rupture of the zonula and endanger the safety of the globe. 4. Cataract may be caused by the point of the instrument piercing the capsule of the lens during the performance of the operation, and this accident is quite probable in the hands of an inexpert operator. 5. The more or less dazzling caused by the greater volume of light admitted through the coloboma formed by the iridectomy. 6. The increased danger of hemorrhage, in the hemorrhagic diathesis, from the cutting of so many blood vessels in the excision of the segment of iris. 7. The increased risk of sympathetic glaucoma in the fellow-eye as the early result, upon an already existing predisposition, of the shock from the wounding of so many ciliary nerves in making the broad incision through the anterior scleral zone and the excision of so large a portion of iris; this increased irritation in a weakened nervous system, conveyed through the ciliary branches derived from the ophthalmic division of the fifth pair to the ciliary ganglion, and thence by its sympathetic root to the cavernous plexus, and thence through "the filaments prolonged on to the anterior communicating artery form a small ganglion, the ganglion of Ribes, which serves, as mentioned above, to connect the sympathetic nerves of the right and left sides"[1] to the other eye, causing or increasing the secretion of serous vitreous and an increase of intra-ocular tension. 8. "It also exceptionally occurs that directly after the iridectomy the resistance of the globe increases markedly, the globe even becomes of a stony hardness. Such cases always run an unfavorable course, according to previous experience" (Liebreich[2]). 9. "In cases of glaucomatous degeneration, iridectomy is apt to make the disease worse, as it usually causes extensive intra-ocular hemorrhage."[3]

The advantages of sclerotomy into the vitreous chamber, when performed in the location and within the limits above prescribed for the relief of intra ocular tension in panophthalmitis or glaucoma are: 1. There is no destruction of iris or of any other tissue. 2. It is performed in a position where the iris cannot prolapse and cannot be caught between the lips of the scleral incision, and therefore no subsequent irritation can arise from that source. 3. There being no iridectomy in this operation there is not the slightest danger, with the most ordinary care, of disturbing the continuity of the zonula or ciliary processes. 4. With ordinary care there is no danger of causing cataract by the point of the instrument piercing the capsule of the lens. 5. There can be no dazzling from an increased volume of light because there will be no coloboma of iris. 6. The danger from hemorrhage, in a hemorrhagic diathesis, will be less because there is no destruction of tissue and a much smaller number of blood-vessels divided. 7. There will be much less risk of sympathetic glaucoma in the fellow eye because there will be much less injury done to the ciliary nerves; not more than one, and probably none, of these nerves will be wounded if the operator is careful to make the incision in a straight line, parallel with the longitudinal axis of the globe. 8. The firm compress and bandage, as already prescribed for use after the operation for the relief of intra-ocular tension in panophthalmitis, will help to keep the incision open and to promptly afford relief to any increase of tension which may be caused by hemorrhage, and will be an aid in checking hemorrhage in glaucomatous degeneration, which is so liable to be made worse by an iridectomy.

The chief disadvantages of sclerotomy into the vitreous chamber are two long standing objections which have disappointed the hopes and baffled the skilful efforts of some of the most eminent surgeons throughout the civilized world for over a quarter of a century, viz., 1. "Since, however, the technical performance of the operation was not adapted to produce a permanent relaxation of the sclerotic, it could only obtain transient and therefore unsatisfactory results:"[4] 2. "Its union with the iridenkleisis (Critchett, Coccius) has theoretically very much to be said for itself, but is to be avoided on account of favoring cystoid cicatrices, and subsequent threatening irritation."[4]

The result of the foregoing case, upon which these suggestions are based, clearly proves that these last two objections can be avoided; for there is not the slightest show of a cystoid cicatrix, and the very shallow ditch along the line of the scleral incision, which has been covered over and nearly filled to the surface by a normal conjunctiva—the surface soil through which it had been dug—proves without a doubt that there is permanent relaxation of the sclerotic. I believe these last two

[1] Gray: Eleventh edition, p. 789.
[2] Stellwag: Fourth edition, p. 323. [3] Ibid., p. 324. [4] Ibid., p. 318.

objections may now be excluded from the list of disadvantages of sclerotomy into the vitreous chamber; and that sclerotomy into the vitreous chamber may become as successful as laparotomy is to day, when the operation is confined to the limits and purposes herein prescribed.

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IS PLEURISY RHEUMATIC?

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Some three years ago the writer, owing to the frequent occurrence of pleurisy as a complication in a series of cases of acute articular rheumatism, had his attention drawn to the latter disease as a possible important factor in the causation of pleuritic inflammations. Consultation of the authorities at my disposal led me to the following conclusions: That the occurrence of pleurisy with rheumatism is recognized; that mention is made by most writers of rheumatism as a possible cause of pleurisy, but that the association of rheumatism and pleurisy is no more obvious to these writers than the association of pyæmia, alcoholism, nephritis, or the exanthemata. This did not seem to tally with my own experience, and further observations seemed necessary to establish the relationship of the two diseases in my own mind. Since then a record of cases of pleurisy, as they occurred in the regular routine of my private practice, has been kept, and I was led to believe that either rheumatism deserves a more important place in the etiology of pleurisies or I have been misled by a rather remarkable series of cases of this disease. For convenience I have tabulated these cases.

The list comprises in all forty-four cases. They occurred in the order here shown. All were well-marked cases. Every case of a mild character was excluded, as was also every case where the diagnosis was doubtful. Several cases of empyema were excluded for several reasons. These cases of empyema were proven to be such at the first visit; they were surgical cases, they were not amenable to the treatment employed in the cases of pleurisy proper, and moreover, they had no special bearing on the question involved. I may state here that the list, however, includes several cases where empyema was, from the presence of recurring chills, sweats, etc., suspected, but happily did not "realize." Special care was taken also to exclude all cases of hydrothorax and pleurodynia, no case being recorded which did not present well-marked physical signs of pleuritic inflammation, and no case being omitted except as above mentioned.

The ages range from less than two to eighty-two years. There were twenty six females and eighteen males. Many of these cases were first seen when the disease was well established, and of necessity the previous duration of the disease is given approximately, there being no guide other than the history obtained from the patient or the patient's friends. The average duration under treatment was a trifle over six days. In twelve of these cases the fluid accumulation was sufficiently extensive to displace the apex beat well to the opposite side. It is interesting to observe that, in contrast with the writer's previous experience, in no case did empyema occur (though Loomis observes that when pleurisy occurs in children, as a sequel to the exanthemata, pus is usually formed); that no cases were fatal; and that in no instance was aspiration necessary, though in two instances a hypodermic syringeful of the fluid (about twenty minims) was withdrawn solely for the purpose of microscopical examination. Otherwise no operative procedure of any sort was performed.

In all these cases but one general plan of treatment was carried out—the anti-rheumatic. This in the main consisted in the administration of salicylate of soda in full doses, and at short intervals, until the characteristic head symptoms were produced, and this effect was, when possible, maintained. In no case did collapse occur; but in two cases—both of them children—slight delirium was observed from pushing the salicylate too far. The alkalies and other anti rheumatics were used freely when indicated, tonics when required, and in general the treatment was such as I adopt in inflammatory rheumatism.

List of Cases.

Number.	Name.	Age.	Sex.	Extent of Effusion.	Supposed Duration Prior to First Visit.	Subsequent Duration and until Recovery.	Complications.	Remarks.
					Days.	Days.		
1	W. M.	23	F.	Large.	2	6	.....	From exposure.
2	G. S.	20	M.	Large.	1	7	Acute rheumatism.	
3	M. M.	11	F.	Large.	2	4	.....	From wetting the feet.
4	H. G.	74	M.	None.	1	2	Rheumatism and fibroid phthisis.	Phthisis.
5	R. W.	29	M.	None.	1	1	Fibroid phthisis.	
6	H. P.	11	F.	Large.	2	3	.....	From exposure.
7	I. R.	16	F.	Large.	3	5	Amenorrhœa; acute rheumatism.	From wetting the feet.
8	G. F.	42	M.	Large.	3	8	Osteo-arthritis.	
9	E. S.	45	F.	Large.	3	9	Acute articular rheumatism.	Valvular disease and dilatation.
10	L. C.	82	M.	Large.	7	11	Broncho-pneumonia.	
11	C. H.	43	F.	None.	2	3	Phthisis.	
12	L. G.	38	F.	None.	4	2	Muscular rheumatism.	
13	L. R.	16	F.	Moderate.	3	6	Acute nephritis.	
14	M. McI.	50	F.	Slight.	2	7	Chronic rheumatism.	
15	E. B.	25	F.	None.	1	2	Acute rheumatism and phthisis.	
16	C. L.	42	F.	None.	3	9	Phthisis.	
17	N. D.	16	F.	Large.	2	4	Tonsillitis.	
18	S. C.	2	M.	Large.	21	13	.....	Empyema suspected, but no pus-cells found.
19	L. McK.	23	F.	None.	3	4	Incipient phthisis.	
20	R. O.	32	F.	Moderate.	3	5	Chronic rheumatism.	Aortic insufficiency.
21	J. F.	35	M.	None.	9	7	Broncho-pneumonia.	From inhalation of dust.
22	H. H.	41	M.	None.	1	4	.....	During convalescence from measles.
23	W. B.	40	F.	None.	1	1	Muscular rheumatism.	
24	E. S.	30	F.	Large.	3	6	Tertiary syphilis.	Phthisis.
25	S. T.	25	F.	None.	3	2	Phthisis, 2d stage.	
26	H. S.	15	M.	Large.	5	8	.....	Convalescing from measles.
27	H. A.	23	M.	None.	5	11	Pericarditis; rheumatism.	
28	M. McC.	2	F.	Moderate.	1	1	Rheumatism, left arm.	
29	L. P.	24	F.	Moderate.	3	4	Amenorrhœa.	From wet feet.
30	D. M.	10	M.	None.	7	7	Rheumatism.	
31	L. O.	25	F.	None.	4	11	Cardiac dilatation.	
32	D. T.	30	M.	None.	1	2	.....	Exposure while convalescing from pneumonia.
33	E. S.	31	F.	Large.	4	9	Tertiary syphilis	Phthisis.
34	E. H.	23	M.	Large.	7	5		
35	R. W.	30	M.	Moderate.	3	5	Phthisis.	
36	M. L.	13	F.	Large.	3	2		
37	A. R.	80	F.	Moderate.	3	13	Chronic rheumatism; acute nephritis.	Valvular disease, left chest filled with fluid 18 hours after wetting feet.
38	J. S.	8	M.	Large.	1	12	Acute rheumatism; pericarditis.	
39	V. W.	22	F.	Large.	21	23	Acute rheumatism.	Fluid turbid, no pus cells.
40	F. B.	20	M.	Large.	4	7	....	During convalescence from pneumonia.
41	J. F.	42	F.	None.	1	2	Acute rheumatism.	
42	J. C.	58	M.	Large.	11	7	.....	From exposure in storm.
43	S. A.	40	F.	Moderate.	5	7	.....	Followed pneumonia.
44	A. L.	3	M.	Large.	3	4	Scarlatina.	

The results were, to me at least, highly satisfactory. In some instances the fluid disappeared almost entirely in twenty-four hours, even when the pleural cavity was nearly full. In one case (No. 39), lasting twenty-three days under treatment, the salicylates could not be borne

for any length of time. When the stomach would tolerate it the fluid subsided rapidly. As soon as the remedy had to be omitted it reaccumulated. This occurred several times during the first week or ten days, and furnishes strong proof of the efficacy of the salicylate in promoting absorption of the pleural exudate. Eventually, on account of the irritable condition of the stomach, it was abandoned, and salol with antipyrin substituted. This case has still some dulness at the base of the pleural cavity, not due, however, to the presence of fluid but to pleuritic thickening. The same condition is observed to a slight degree in two other cases of like character.

No claim is made that salicylate of soda is a specific in pleurisy with effusion, or in dry pleurisies. But that it will reduce the effusion, abate the cough, relieve the pain, and cure the patient more rapidly and effectually than any other remedy with which I am acquainted, this much I am certain of.

Neither is there any claim for priority in the use of this remedy, as I am well aware that Germain Sée, Aufrecht, and many others have advocated its use. But some three years ago, without the knowledge that it was used by others in this disease, I began the use of this remedy in pleurisies of rheumatic origin, and was so well pleased with the results that I had no hesitation in extending its use to cases which were not obviously rheumatic, using it since then persistently in all cases which were non-purulent. It would be, of course, as absurd to rely on the use of this remedy in empyema as to treat a suppurative knee-joint on the alkaline plan.

In cases Nos. 24 and 33 two distinct attacks of pleurisy occurred, with an interval of about one year. The patient was on anti-syphilitic treatment, and when the effusion took place the only modification of the treatment was the addition of full doses of the salicylate.

Nine cases occurred in connection with phthisis. In no case was a pleurisy the starting-point of a phthisis. Two cases occurred during convalescence from measles—one as a complication of scarlet fever; five followed or were coincident with the various forms of pneumonia, but in these cases the pneumonia played a secondary part where the two were present at the same time.

Are the results noted due solely to chance—to the happy use of a so-called specific? Or is the secret of success in these cases due to the recognition of the underlying factor—the rheumatic diathesis?

Pleurisy is not a fatal disease. Under any ordinary plan of treatment the vast majority of cases eventually recover. A few develop extensive pleuritic adhesions and thickening, some empyemas, and still others run into phthisis or interstitial pneumonia. As previously noted, three of the cases cited developed pleuritic thickening. As these cases were severe, as the disease had existed in each instance for some length of time before treatment was instituted, and as they were the kind of cases which, according to my previous experience, usually developed pus, I have reason to be satisfied that they recovered with no further trouble than the pleural thickening.

Is pleurisy rheumatic in its origin? Practically I have found that the average run of cases is purely rheumatic.

Loomis says "the etiology of acute pleurisy is sometimes very obscure." He states that it occurs in connection with injuries, pyæmia, the exanthematous fevers, acute and chronic alcoholism, acute rheumatism, Bright's disease, pneumonia, etc. Flint, giving practically the same causes, mentions that "it is developed occasionally in connection with acute articular rheumatism." Wilson, in "Pepper's Practice of Medicine," makes no mention of it as a cause of dry pleurisy, and mentions it merely as occasionally associated with pleurisy with effusion. Other writers lay especial stress on tuberculosis as the usual causative factor. Still others advocate the microbic origin. In fact, the list of possible causes is so long and so indefinite as to resemble in its length and uncertainty, at least, a chapter on the etiology of acute rheumatism.

If these writers represent the profession as a whole, if this is the generally accepted view of the causation of pleurisy, then I am compelled to take issue with them. I believe that the most prominent cause of pleurisy is rheumatism. I wish it distinctly understood that I do not hold that every case of pleurisy is rheumatic. That the suppurative pleurisies are due to infection by the diplococcus of Fraenkel, by streptococci, or by staphylococci is admitted. That simple pleurisies may arise in other ways is conceded. But that the commonest cause is rheumatism I am convinced—rheumatism pure and simple, rheumatism as an intercurrent affection, or rheumatism engrafted upon some chronic tubercular or other previously existing disease.

In reviewing the reasons which led me to arrive at this conclusion I find that they are numerous.

To properly appreciate them a careful comparison of the two diseases is necessary. The reader will bear in mind that it is but fair to contrast the pleuritic inflammation with the purely synovial inflammation in joint rheumatism. The pleura is a serous membrane, a gliding joint if you will, or an enlarged bursa, between the lung and the chest-wall. Its function is to allow full movement and to prevent friction, and it is lubricated with a serous fluid. In other words, it is a modified joint, not between two bones, but between the lung and the thoracic wall. Gray says that the synovial membrane "resembles the serous membranes in structure, but differs in the nature of its secretion, which is thick, viscid, and glairy." This is a difference in degree, not in kind. We do not use successfully the same lubricant for a lumber-wagon and for the delicate mechanism of a watch, yet the principle is identical. That the joint surface and the pleural surface, or perhaps, more properly, the joint cavity and the pleural cavity, are similar in structure, in secretion, in function, and in the character of their inflammatory affections, is evident. That slight variations are found is but to be expected.

Pleurisy may be acute, subacute, or chronic. So also a rheumatic joint. Pleurisy may result in the formation of fibrin, serum and fibrin, serum, fibrin and pus, or new connective tissue. It may be dry or wet, suppurative or adhesive. Compare this with the changes which occur in the synovial membrane of the knee-joint, for instance. Have we not all seen a "dry" rheumatic joint with distinct crepitus like that of pleurisy; joints with effusion from rheumatism; joints with fibrous anchylosis from this cause, and, though more rarely, abscess in the knee-joint from a neglected rheumatic effusion which became infected with pyogenic germs?

A comparison of the statements of the majority of our writers in regard to the etiology of pericarditis and of pleurisy might be instructive. Wilson, in "Pepper's Practice," states that "by far the most important cause of pericarditis is acute articular rheumatism," yet he merely gives passing mention of rheumatism as a possible cause of pleurisy. Other writers take practically the same stand. Yet in what essential does the one closed sac of serous membrane differ from the other either in structure or in function? Why should rheumatism patronize the one exclusively and boycott the other? Surely such partiality is unfair! Let rheumatism attack something of its size, and not pitch solely into the smaller neighbor.

An analysis of the forty-four cases in the list throws some light on the subject. Sixteen cases occurred in connection with acute rheumatic attacks, one with tonsillitis of a rheumatic nature (?), and one with severe rheumatoid arthritis. This is in itself a strong argument. A personal acquaintance with these cases and the members of their immediate families shows something which does not appear from the list of cases—that the rheumatic diathesis played an important part in many of the cases which could not be classed as directly due to, or associated with, distinct rheumatic attacks in other

parts of the body. These cases are, of course, not classed as rheumatic in the list given above.

Eight of the cases were evidently directly due to exposure to wet and cold, such exposure as might readily induce an attack of inflammatory rheumatism.

Nine cases occurred in connection with phthisis. Was the pleurisy merely a part of the phthisical process already established, or was it an intercurrent affection? The patients almost invariably laid the pleuritic process to exposure to cold. This of course is not the best of evidence. They got well with remarkable rapidity on anti-rheumatic treatment. Rheumatism "goes to the weak spot"—in this case to the serous investment of the lung. The pleurisy was readily cured. The phthisical process persisted. It is reasonable to suppose that these pleurisies were non tubercular, but due to rheumatic attacks during the course of a chronic phthisis.

A few years ago, while engaged in surgical work exclusively, I treated numerous cases of synovitis of the knee-joint with effusion, due to injury, by means of plaster-of-Paris splints and the usual surgical procedures. Since then I have learned that there is another aspect of these cases, that a man who sprained his knee severely did not necessarily get an effusion into the joint; but, given a sprained knee and a "touch" of rheumatism, and you would be very apt to find it. So with pleurisy occurring in the case of a man who breaks a rib, in the syphilitic or in the tubercular subject, there may be more than one element at work.

Looking at it in this light, the necessity for fine points of differentiation between pleurodynia—the old-fashioned false pleurisy—and pleurisy proper is not so apparent. Purely from a practical stand-point it matters little whether the rheumatism is in the chest-wall, in the costal pleura lining the same, or in the pulmonary pleura immediately in contact with the latter. In a case of articular rheumatism we do not inquire so particularly as to whether the external parts only are involved, or whether the synovial membrane is also inflamed. There are few cases of pleurisy which do not on careful examination show strong evidences of pleurodynia or muscular rheumatism in the chest-wall, in addition to the signs of fluid effusion, the pain from pleuritic irritation, and the other classical symptoms of a full-fledged pleurisy. When we have a rheumatic joint do we treat the synovial membrane or the capsular ligament? Do we not rather treat the rheumatism as a whole, and the local lesions when indications call for it.

A disease so widespread as rheumatism, a disease which is acknowledged to be capable of affecting almost any portion of the anatomy, is fully capable of producing pleurisy, and it only remains for a sufficient number of careful observations, made with the end in view of settling this point, to establish the truth of this matter.

It may be added here that I find it not uncommon for a moderate pleural effusion occurring during the course of an inflammatory rheumatism to be overlooked. Cough and dyspnœa may be absent, and the pain in the side is easily accounted for. That it is a more common complication than is usually considered I am fully convinced.

This list of cases attests the value of the salicylates in promoting absorption of pleural exudates. Compare and contrast this general plan of treatment with that advocated by Loomis, who gives opium the most prominent place; with Flint, who advises bloodletting, opium, and aconite; with Pepper, who says that the "treatment is symptomatic;" with the blisterers, the tappers, and the "vis medicatrix" nihilists.

Can it be that we have something yet to learn in regard to this disease beyond the best way to keep an aspirator valve in perfect order, to sterilize a trocar, or to improve on Estlander's operation of thoracoplasty? Must we, on the other hand, go back to blind empiricism and give salicylate of soda because it is "good" for pleurisy, or antipyrin because it "absorbs" the effusion? Or shall we bear in mind the diathesis, the underlying condition, the predisposing cause, the etiological factor?

A theory of some sort is better than empiricism. Let this stand or fall as it deserves.

NEPHRITIS OF PREGNANCY AND ITS SEQUELÆ.

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In proportion as our knowledge of the nature of disease and the action of remedies increases, the practice of medicine becomes more rational and its basis more sound.

Though aware of the dangers not infrequently attending the nephritis of pregnancy, especially so in relation to complicating eclampsia, we are still far from being enlightened, definitely, as to the reason why albuminuria so frequently attends pregnancy. It is immaterial, in its clinical aspect, whether a distinct nephritis exists previous to or follows upon the pregnant state, or whether the condition existing during pregnancy be a distinct nephritis or a simple albuminuria, the complications arising are practically of equal importance.

Many theories have been advanced to account for the development of a nephritis or albuminuria, but their value is unfortified when applied to etiology as a whole.

That which has gained considerable ground, and which has been strengthened post-mortem, is pressure of the lower uterine segment upon the ureters, causing compression with subsequent dilatation of the latter; more especially is this so in primiparæ, where the abdominal walls are comparatively tense.

As the gravid uterus gradually enlarges, there is an added pressure upon the various adjacent vessels, causing a venous stasis. As regards the value of this pressure theory, it may be well to state that record has been made of various cases of ovarian tumors of large size, as also uterine fibroids, which were complicated with albuminuria, in which, after operation, the albumin disappeared almost immediately.

In this connection, I would offer the query: May not the reflex phenomena of nerve irritation, which so often accompanies the pregnant state, prove a prominent factor in the etiology? The state of the general nutrition, occupation, and habits of life of pregnant women, have little, if any, apparent influence in the etiology—a rather remarkable fact.

Having in mind pregnancy in its early stage, there can be no question of the substantial gain derived from a more careful attention to the state of the kidneys; especially in primiparæ, we should ever recognize the importance of early and repeated examination of the urine, enabling us generally to forestall any impending renal complication.

In a nephritis existing previous to pregnancy, examination of the urine should be made at the outset and continued during pregnancy.

Taking a known case of nephritis, existing either previous to or consequent upon pregnancy, we should bear in mind the fact that the management of such case is of prime importance; it should have reference particularly to three things: The relative amount of albumin present, the presence of casts, and as to their number, and a fair amount of urine excreted daily.

Very rarely we may find that examination of the urine will prove negative as to albumin, yet the microscope will detect an occasional cast; such a case demands our closest attention.

The presence of casts in the urine, a warning only too significant, would lead us to surmise a lurking danger of eclampsia during the final stage of pregnancy, during labor, or subsequent thereto.

A few words here on the subject of eclampsia. To enumerate the various explanations that have been given

and considered as important factors bearing upon the etiology of eclampsia, would require too much space, unwarranted in this short paper. The essential factor is the additional work thrown upon the kidneys through the elimination of excessive quantities of excrementitious matter in the later stage of pregnancy, aided no doubt by some intercurrent condition giving rise to an abnormal activity of the nervous system.

Eclampsic seizures not infrequently occur without any warning or previous history, or evidence of nephritis; though exceedingly rare before the sixth month of pregnancy, they may make their appearance at any time subsequent thereto, and the knowledge of an existing nephritis should place us ever on guard against threatened danger from eclampsia.

It is a singular fact that nephritis, as also eclampsia, may complicate one pregnancy and be absent in the next; or, that relapses are occasionally observed in recurring pregnancies.

Several instances of such can be cited from my own practice where there was an existing nephritis, in one case complicated with eclampsia two weeks before term, these cases being primiparæ, yet their subsequent pregnancies were unattended with any complications whatsoever.

I have notes of one case quite unique and instructive in character: Age, twenty four, primipara, giving a history of nephritis for two years previous to pregnancy, which, naturally continuing during the latter, developed in the eighth month into a pyelitis, with acute symptoms referable to the right kidney, following upon inclement exposure.

As in the case of eclampsia just referred to, the question of premature delivery, though entertained, was not acted upon, my desire being to follow the cases closely along lines seemingly rational in procedure; conservative measures of treatment, in both cases, aided by repeated examinations of the urine, were well rewarded, labor occurring at term unattended with any signs of danger, and convalescence uninterrupted.

To give an alarming prognosis because of existing albuminuria is certainly unwarrantable; with early and repeated attention given to the existing complication, the chances of the patient going to full term are correspondingly increased. The presence of casts and a greatly diminished quantity of urine excreted daily, possess special significance in the prognosis; even as regards the prognosis in eclampsia, experience has shown that the danger to life exists more in the violence of the convulsions than in their frequency. As to the time of occurrence of eclampsia, statistics compiled by Rosenstein (Ziemssen, vol. xv.) show that in 449 cases convulsions occurred in 121 cases previous to parturition, 260 cases during parturition, and 118 cases subsequent thereto, or during the puerperal period.

The ratio of eclampsia in primiparæ, as compared with multiparæ, is as 8 to 2. Not infrequently, these eclampsic seizures, though having a favorable termination to the mother, may have an unfavorable one to the fœtus.

In the treatment of the nephritis of pregnancy, we should dwell particularly upon the positive subjective symptoms: the character of the urine. Though we are not to undervalue the significance of the evidence furnished by the presence of albumin, it were well to shake off, in great measure, the inordinate fear inculcated in our minds by the teachings of the past, with reference to the dangers attending the presence of such; careful attention and rare judgment throughout is destined to be of great value in attaining the end sought for.

The continued free and regular action of the skin, kidneys, and bowels, by means of mild diaphoretics, diuretics, and saline laxatives, and cardiac sedatives, are the main therapeutical indications.

In the presence of eclampsia, the consequences are so momentous that a proper management is the first requisite to the accomplishing of a successful issue. We have before us quite an array of drugs or measures, by means of which we can combat certain emergencies. The functions of the skin being more under our control, can be promptly called into action; as a rapid and energetic diaphoretic, I have found pilocarpin of the best, given in one quarter to one-third grain dose, hypodermatically. To control the convulsions is of paramount importance; the reflex excitability of the spinal cord can best be overcome by inhalation of chloroform or nitrite of amyl, morphia hypodermatically, or enemata of chloral; where there is reason to apprehend recurrence, chloral acts favorably as a prophylactic; hot baths, at a temperature of 100° F., to 110° F., also serve a good purpose.

Venesection is rarely called for except in plethoric cases. Subsequent to the convulsive seizure or in the interval of such, the internal administration of infusion of digitalis, combined with alkalies, and even the fluid extract of jaborandi, will answer an excellent purpose in favoring the elimination of both solid and watery constituents of urine; veratrum viridi has also proved an efficient cardiac sedative.

Our resources to meet these subtle complications and dangers are of such a nature that a controlling influence is generally exercised by the above therapeutical measures.

The propriety of resorting to premature delivery forces itself upon us only when the attacks are severe and persistent; we must also recognize the danger of alarming hemorrhage and shock, in inducing labor prematurely.

When the convulsive seizures occur during labor, steps should be taken to expedite delivery consistent with the safety of the mother, if not the child; too active interference may prove dangerous, provoking reflex convulsive seizures.

In the words of Professor Parvin, "Although close to the gate of eternity, do not give up the battle, but fight to the water's edge; even the most desperate cases will at times rally and get well; such should inspire us with hope and confidence."

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NOTES ON DISEASE OF THE EAR AND UPPER AIR-PASSAGES IN APEX CATARRH.

By HOWARD S. STRAIGHT, A.M., M.D.,

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The inflammatory conditions of the ear and upper air-passages due to certain constitutional conditions—gout, rheumatism, syphilis, etc.—have all been described by competent observers and their importance impressed upon the profession for years. I can add nothing to these observations. An occasional case associated with such constitutional states presents itself to my observation, but while I see one such case, I see many whose constitutional condition is simply called "lowered vitality, general depression, etc.," by the various writers, and yet is never discussed. Apex catarrh[1] is the name I have chosen for this condition. A large proportion of the cases of throat, nose, and ear disease coming under my observation have also the condition called apex catarrh. This statement applies to patients from eight to forty years of age. Patients younger or older than this are less liable to suffer from such constitutional condition.

Patients who have an apex catarrh are very susceptible to colds. This cold may limit itself to any part of the upper air-passages or the middle ear, or the entire mucous membrane may be involved. These acute inflammations of the upper air-passages do not extend lower than an ordinary acute laryngitis. They differ in no respect from ordinary colds, except that the subjective symptoms of the patient are more marked.

The patient does not recover so rapidly, and the local inflammation in certain cases is much more obstinate than one would expect. In Cleveland slight thickenings of the anterior turbinated bones are almost universal. Many such cases suffer little because the condition has come on so gradually and because they know no other condition. They only realize that they had catarrh when the condi-

[1] Medical Record, January 6, 1894.

tion has been relieved. The great prevalence of ear disease everywhere is also well understood, and the connection between diseases of the nose, ear, pharynx, and larynx. In diseases of the ear and upper air-passages, as I see them, there is always two main considerations, the local and the constitutional, or the condition of the nose and the condition of the apices of the lungs.

You often see cases in which both conditions exist. The question to decide then is which condition, the local or the constitutional, is the one which has most to do in causing the disease of the ear, pharynx, tonsil, or larynx. These two conditions do not account for everything, I am well aware, and yet they claim consideration always as regards prognosis and treatment.

The importance of apex catarrh in ear disease was forcibly impressed upon me three years ago, when I was in general practice and a visiting physician to one of the hospitals. A boy, aged twenty, whose language no one could understand, was brought to the hospital. The only history we could obtain was that he had been sick for six weeks and had had no medical attention. He had a large accumulation of pus in the mastoid region, and the house surgeon had lanced the abscess before my morning visit, at which time I saw the case with one of the surgeons. The ordinary local treatment in such cases was proposed, and also it was suggested that calomel and rhubarb should be given because of the marked gastro-intestinal disturbance. I was not at all convinced that the local condition accounted altogether for the boy's condition, but thought it wisest to make no suggestion as to apices. A few days later he died from a profuse hemorrhage of the lungs.

Nearly one half of all the cases of ear disease in patients from eight to forty years of age that pass under my observation have also apex catarrh. Many have hypertrophic rhinitis. Both conditions require attention. While the increased susceptibility to colds accounts for the acute inflammations of the middle ear that are so often seen in patients with apex catarrh, I have been repeatedly surprised at the number of cases of chronic middle-ear inflammation that present themselves on account of their increased suffering under a similar constitutional condition. These patients are often people who have suffered for years from marked loss of hearing, and who have ceased to believe that there was any hope of relief. Upon the development of an apex catarrh they begin to suffer more from catarrh of the upper air-passages and to complain more from the subjective symptoms. The examination of the ear often reveals simply marked changes from an old inflammation, and yet no trace of any acute trouble. Such cases under creosote, without any local treatment, very soon regain their usual amount of hearing. Even cases of posterior adenoids in children over eight years of age are often associated with an apex catarrh. There is, of course, no connection between the diseases. Whether chronic catarrhal conditions of the nose, naso-pharynx, or pharynx predisposes a patient to an apex catarrh is an open question. For my part I do not believe it. I can understand how such conditions might be responsible for an ordinary chronic bronchitis, but not how an apex catarrh —a localized capillary bronchitis—could be dependent upon any such cause. Posterior adenoids in many cases cause few symptoms. If an apex catarrh occurs in such a patient, the posterior adenoids become more troublesome because of repeated fresh colds, and the patient presents himself for relief. The statement made as to posterior adenoids applies equally to chronic nasal catarrh.

The course of an acute follicular tonsillitis may be very greatly modified when occurring in a patient with an apex catarrh. The first few days there is nothing different from the ordinary symptoms. At the time, however, at which one expects the swelling of the tonsil to begin to subside, and the tenderness to diminish, they are found to be as marked as in the first two days of the disease. In some cases the swelling subsides about as fully as in the uncomplicated case, and yet the tenderness upon swallowing is entirely out of proportion to anything one can see in the throat.

Two years ago in February a girl, aged sixteen, presented herself at the clinic. She had been under observation three months before, for three or four weeks, with an apex catarrh. After improving upon creosote she had discontinued her visits. Three weeks before coming under observation the second time she had had an acute sore throat, from which she had not yet recovered. During this time she had been able to swallow only liquid food. The swelling of the tonsils had largely passed away, but the reddening was marked and the tenderness upon swallowing very great. A re examination of her chest revealed a well marked apex catarrh still present. She was given drop doses of creosote every hour. Within twenty-four hours she swallowed solid food. The local condition rapidly recovered, but the girl continued her constitutional treatment for a number of months.

This is simply one of many cases that have passed under my observation. They are by no means rare. Three such cases consulted me last week. A large number of the cases of subacute or chronic laryngitis in people in middle life are associated with an apex catarrh. Many of these cases have also a hypertrophic rhinitis. Both conditions have an influence upon the larynx. Both ought to be treated of course. What to promise such a patient as to the improvement of the throat for the first three months is a difficult question. Every such case improves in many ways when the course of the apex catarrh is a hopeful one. The great majority of cases recover of the laryngeal trouble within a few weeks after cauterization of the nasal hypertrophies and the administration of creosote. In a small proportion of cases, although the patient improves in every way, the laryngeal inflammation persists. After a few weeks' local treatment my rule is to inform such patients that they must not expect to be entirely relieved of the throat symptoms until they have regained their general health—until the disturbances in the mucous membranes, of which the inflammation of the larynx is only a part, shall have passed away. It is recommended that stubborn cases of chronic laryngitis be painted with increasing strengths of nitrate of silver solution.

I have never considered it advisable to pursue such a course in a laryngitis of this kind. If one failed to consider the constitutional condition of his patient, or did not know that exceptionally a laryngitis might pursue such a course, the local condition might receive over-treatment. There is, to my knowledge, no way of determining which case will promptly recover, and which case will persist, it may be, for months.

If the practitioner overlooks the constitutional condition, he fails to accomplish for the local condition what he otherwise might do. This statement I realize because I have only learned it from many a humiliation. I shall never forget a child, aged six, that I had treated for nasal catarrh for a number of weeks, and could not understand why the catarrh was not relieved. There was nothing in her appearance to make me suspicious of an apex catarrh. Finally, I examined her chest and found the key to the situation at one apex. Under benzosol her nasal condition passed away, almost at once. If either condition must be overlooked, the local is of lesser importance, and unless the specialist looks beyond the local condition the patient had better be in the hands of the sensible general practitioner. The local condition is easy of diagnosis, the patient has made the diagnosis himself, and will always insist on attaching undue importance to it. He has not as yet found out that his vitality is below par. It is useless to say much to such a patient in the beginning of his treatment. I aim to say enough to impress upon his mind my belief that there is more at fault than the local conditions. He soon sees for himself that my opinion of his case is correct. When this time has arrived he will accept the statement that he will be far from well when the local difficulty is relieved. It is not claimed that the course of the local condition is

especially modified by the knowledge of the catarrhal condition at the apex, *i.e.*, the catarrhal condition of the mucous membranes of the entire body.

Cases of apex catarrh recover upon any tonic treatment. The specialist who gives iron because his patient is anæmic, and then treats the local condition, is going to benefit his patient; or if he administer stomachics because there is a disturbance of the gastro-intestinal tract, the results will be satisfactory.

And yet how a specialist can intelligently treat the ear and upper air-passages without taking into careful consideration the facts herein stated is a mystery to me. There is little science in administering iron because a patient is anæmic. The cause of the anæmia ought to be found. If it is found to be due to an apex catarrh, creosote is a much more satisfactory remedy.

I might have summed up the entire paper in one or two sentences, and yet the subject has been treated at this length in the hope that this view of disease of the upper air-passages might be helpful. This is the result of years of study. Such conditions certainly exist in Cleveland. During 1888 and 1889 it was my privilege to work for a number of months in the ear, throat, and nose clinics in Vienna, and yet I never heard anything concerning the condition I have endeavored to describe in this and a succeeding paper. I never saw any observation made as to the pulse and temperature in the out-patients. It has been no easy matter to attempt to put my ideas on paper. Whether I have succeeded, the reader must judge.

A FEW WORDS IN REFERENCE TO LIVING CELLS VERSUS STAINING.

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I RECENTLY stated [1] that "I was becoming more and more convinced that Virchow's teaching not to stain tissues was the best." Of course this does not apply to bacteriological examinations, but to general pathological work, such as the examination of tumors, etc. By this statement I did not intend to underestimate the value of recent advances made in processes of staining, such, for instance, as Golgi's method in the examination of the nervous system, but rather to draw the attention of the profession to the fundamental difference between a living cell and a dead cell—to living tissue and dead tissue—facts which have not been sufficiently considered. The great objection to our ordinary laboratory examinations lies in eliminating artificial products, and in the radical difference which must and does exist between the living and the dead cell. My own observations on the blood-cells, which I have lately published and to which I wish to revert merely for purpose of illustration, show that the red blood corpuscle which does not, as a rule, with few exceptions, stain with methylene-blue by our regular laboratory method, will do so when this substance is given internally. While the red blood-corpuscle will imbibe methylene-blue when given internally, it does not do this in all cases alike. I mean that it is influenced by various factors—by the condition of the cell. In some cases it will take weeks to become stained, while in pernicious anæmia it will stain readily. Even on the dead red blood-corpuscle this tendency in pernicious anæmia to imbibe not alone methylene-blue, but other stains, has previously been noted. But it becomes more manifest on the living cell. It has long been known that the nucleus of a cell has a special affinity for certain stains, viz.: Carmine, hæmatoxylin, aniline, hence the term "chromatin" (nuclein), which Fleming applied to it. During the process of karyokinesis the mass of threads formed are chromatic, while certain threads are achromatic (do not imbibe these stains). My observations on the nuclei of the white blood-corpuscles in which methylene-blue had been given internally, that is in dealing with living cells, prove to me beyond doubt that the term "chromatin" for the nucleus of a cell has not been misplaced. While it must be admitted that on the living cell the protoplasm imbibes the stain, it rarely does it so markedly as does the nucleus. It has long since been demonstrated that certain intra-cellular parasites, such as the plasmodium malaria, which usually finds its habitat within the red blood corpuscle, has, like the nucleus of a cell, a special affinity to imbibe certain stains. This can readily be seen by our ordinary method of staining this parasite with methylene blue in the laboratory. Indeed some writers [1] regard this affinity of the plasmodium for methylene-blue as quite characteristic, and think that this property will often enable us to distinguish it from other intracellular parasites. By giving the stain internally this affinity of the plasmodium to imbibe it can readily be demonstrated. And, strange to note, it will, in a brief space of time, cause the disappearance of the plasmodium from the cell, or, in fact, from the blood. My observations on this point confirm those of Matienzo,[2] who first made known this fact. It was for that reason that he recommended methylene-blue in the treatment of malaria in some cases in place of quinine, etc. It is to be regretted that it does this, because if the living cell with its parasite retained the stain, like the nucleus or nuclei of the white blood-corpuscles, what a splendid opportunity it would afford us to study the life history of the plasmodium malaria! I believe we may yet find a stain to do this. I have tried eosine, but was unsuccessful It is possible that we may be more successful with carmine or hæmatoxylin. It is apparent that while we can stain the blood-cells during life we cannot do this with all cells in the body. If this were so, what a difference it might produce in histology and pathology!

158 ROSS STREET, BROOKLYN, E. D.

[1] St. Catharine's Hospital Report, 1893.

TREATMENT OF FRACTURES AND SPRAINS OF THE ANKLE BY MASSAGE.

By ALEXANDER C. WIENER, M.D.,

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WHILE there has been great activity in all branches of operative surgery, and strenuous efforts have been made to improve present methods and to introduce new ones, yet in the treatment of fractures there has prevailed a manifest reluctance to change the old and approved methods. What else can account for the total disregard paid to the theses delivered by Lucas Championnière at the Paris Société de Chirurgie, June 26, 1886, on the treatment of fractures by massage? His ideas suggested a complete revolution in the treatment of fractures, although this method of treatment has nowhere received such general recognition as in France.

The treatment by massage fulfils in general the three following conditions: 1. It shortens materially the time of recovery and lessens the period of ossification. 2. It gives better results functionally. 3. It lessens the pain of the treatment.

Since then massage has been recommended for all articular and periarticular fractures; but in no case has it produced more striking and indisputable results than in the treatment of fractures of the ankle and the various sprains of the foot. In such cases this is the classic treatment. When we consider that the expectant treatment of immobilizing the foot in splints or in plaster requires at least thirteen weeks for the recovery of a fracture of both bones, two-thirds of this time being required to overcome the stiffness of the joint and the atrophy of the muscles resulting from the immobilization, a method of treatment that diminishes the time by one-half is worthy of consideration.

A simple sprain of the foot treated by the expectant method, that is, by bandages and rest, renders the foot useless for twenty-five days on an average, whereas the patient treated by massage can move about freely after

[1] Adler: Protozoa and Their Relation to Carcinoma. American Journal of the Medical Sciences, January, 1894.

[2] La Gaceta Medica, 1893.

eight days. Twenty-five per cent. of all the fractures that occur affect the ankle. The sprains to which this joint is subject are numberless; and what a wide field this opens to the physician, who, as a rule, prefers to take an active part in the process of recovery rather than to apply a bandage and see himself reduced to the part of a passive spectator.

The diagnosis of fractures of the ankle offers no difficulties; but I beg to be permitted to say a few words regarding the mechanism of the different fractures, since an understanding of this is essential to successful treatment. Fracture of the inner malleolus is produced by the forced lowering of the inner and raising of the outer margin of the food. The deltoid ligament being the first to meet the force is, as a rule, not torn, but tears off the end of the tibia, to which it is attached. The foot is then allowed to roll around its inner border into a most pronated position. The outer malleolus is driven against the outer border of the calcaneus, and in most cases the end of the fibula breaks off six or seven centimetres from its lower end (Pott's fracture). The next most frequent cause of fracture of the inner malleolus is dorsal hyperflexion of the foot. The simple fracture of the outer malleolus (Dupuytren's fracture) is produced by forcing the foot down on its outer border. In many cases only the outer ligament, that is, the ligament calcaneo-fibulare, is torn in consequence of the supination of the inner border of the foot, but usually the lower three centimetres of the fibula are broken off transversely. The fragments are not usually dislocated, being held in place by the ligament tibio fibulare. The action of the force upon the joint affects only the ligaments immediately. If they are not torn they transmit the force to their place of attachment to the bone and thus a solution of continuity is produced. The mechanism of the simple sprain of the ankle joint and its fracture is the same, the difference lying only in the intensity of the force exerted. This difference is still slighter when we consider the great extravasation of blood in the ankle-joint which is produced in tearing the ligaments.

Massage has for its object the prevention of the normal degeneration and the removal of the blood from the joint and the œdema from the soft parts. The treatment during the first eight days is of the utmost importance. The blood must not be allowed to coagulate; the process of regeneration in the bone, which begins, at the latest, a few hours after the injury, must be accelerated by stimulation.[1] The pain must, as a rule, be relieved in three or four sittings. Massage must begin immediately, provided there is no dislocation of the bone. In fractures of both bones the astragalus has lost its position, the foot wabbles about and frequently the astragalus is dislocated backward. As the bones always consolidate in the position which they take of themselves or in which they are placed, an immediate reposition, if necessary under an anæsthetic, and retention in this position are indispensable. These are the only cases in which immobilizing is indicated. The foot is placed with light pressure in a position perpendicular to the leg, and then placed in a plaster cast; a woollen or silk stocking may be used next to the limb and a three inch plaster-of-Paris bandage applied. The bandage reaches to the upper third of the leg and encloses the whole foot except the toes. For strengthening the cast at the sole of the foot, a strip of paste-board may be included. After three days a return to a wrong position need not be feared. The bandage is removed and treatment by massage begins. If, as occurs occasionally, the astragalus again becomes dislocated, a paste-board splint may be made, which can be easily put on or removed. Massage of recent sprains or fractures is to be practised under the same aseptic precautions as for recent wounds. The foot and leg are to be thoroughly cleaned with warm water, soap, and brush, the hair removed and the skin then carefully dried. The physician's hands must also be thoroughly cleaned. Disinfecting agents must not be used, as they irritate the skin too much. The epidermis always presents minute openings through which pus-forming agents may penetrate and find rich soil in the extravasated blood. The limb is then well anointed with sweet-oil or vaseline, and placed on a solid support. If there is a tendency to a return of the dislocation in the first few days after the removal of the bandage the foot must be held in the proper position by an assistant. In simple sprains I prefer to apply massage while seated, the patient's limb being supported on my knee.

Massage consists in a gentle pressure of the volar surfaces of the united fingers moving in a centripetal direction. At first one must avoid touching the fracture and must not continue the sitting too long. The first treatment should not exceed ten minutes. From the fourth sitting on, each one should occupy at least twenty minutes. For practical reasons I would have only one sitting a day and make them somewhat longer. In making the passage from the periphery toward the centre, the blood exudate and œdematous fluid are pressed toward the lymph spaces and urged toward the heart. How powerfully the lymph currents are stimulated is shown by the fact that after a few days the lymphatics of the legs and thigh become visible from the coloring matter of the blood which they contain. The hyperæmia of the veins and the troublesome throbbing and heat in the joint are also promptly removed and the rich arterial blood supply promotes the healing of bones and ligaments. The muscles preserve their elasticity and the equilibrium of their metabolism; their contractions assist the flow of the blood into the more deeply lying veins. The painful contractions which follow the over-stretching of the muscles and tendons disappear rapidly. The most immediately favorable result of the massage for the patient is the fact that the treatment after three or four painful sittings becomes almost painless; for, with the removal of the extravasation, the pressure on the sensory nerve ceases. At the end of the sitting the abundant oil on the surface is removed with alcohol, which has a pleasing, cooling effect on the stimulated skin. The fractured limb is wrapped in a cloth moistened with cold water and the air kept out by a covering of oil-cloth. These coverings are changed every two or three hours. A little acetate of lead or witch-hazel may be added to the water. Ice should never be applied to the fracture; it coagulates the extravasated blood too rapidly and produces anæmia; in short, all the beneficial effects of the massage are undone by ice. Hot water, 100° to 105° F., in form of local baths applied for half an hour each day assists the massage by removing the extravasated fluid.

The second essential in treating sprains and fractures by massage is not to immobilize the joint. All immobilizing of the foot hinders the recovery and lessens the usefulness of the foot. The only exception to this rule has already been mentioned. Since in fractures of the inner malleolus the foot is always inclined to be pronated, that is, to be flat-footed, especial attention should be given to the position of the foot. The leg should rest on a solid, somewhat elevated support. The sole of the foot presses against a smooth, polished, square board, which is placed at right angles to the support, and in such a manner that the inner border of the foot stands higher that the outer. If the astragalus during the treatment is inclined to become dislocated backward, an elastic cushion should be placed under the heel, so that the bone will be held in place by the weight of the leg. The pes valgus position of the foot is most easily corrected by the application of an elastic flannel bandage; but the joint must be left freely movable. The advantages in not immobilizing the joint are apparent. The flexors and extensors of the foot remain in continuous activity and in the perpendicular position of the foot the antagonizing muscles maintain their equality. The pressure of the foot against a fixed surface provokes continuous elastic movements in the ankle around a transverse axis, which prevents the formation of synovial adhesions and atrophy of the articular cartilages. The mobilization of the joint fulfils for

[1] Formativer Reiz, Virchow.

the most part the same indications as the massage; both are equally important factors in the cure, they combine and co-operate with each other. The maintenance of the muscular tonus produces a continuous auto-massage. The patient himself, not being hindered by any bandage, is continually tempted to test his progress; he makes active movements in the injured joint, even when, as at first, the sensations are not agreeable; he is interested in hastening the progress of the cure by its own activity. According to my experience, it is not advisable to make passive movements.

In more serious sprains of the foot, the recovery requires four to eight days; in simple fractures of the outer malleolus ten to twenty-one days; in fractures of both ankles, especially with dislocations of the fragments and luxation of the astragalus, the time is variable, usually from four to six weeks. The eight clinical histories which Lucas Champonnière gives in his lecture are all cases of fracture of the outer malleolus. Only once was the inner malleolus also dislocated. In no case was there dislocation or abnormal mobility in the ankle-joint. They were all treated with massage from the first day without immobilizing bandages. Champonnière considers the first day on which the patient can walk without assistance as the day of recovery. The shortest time was twelve days, the longest twenty-eight, average, twenty and two-tenths days.

In the City Hospital in Magdeburg, sprains and fractures of the foot are treated by massage since the year 1888. I had the honor of proposing the new mode of treatment to my chief, Dr. Hagedorn, lately deceased, and we obtained results which were new and surprising to both of us. The number of cases treated in the years 1888 to 1891 was about one hundred. We considered the patient cured when he had recovered the use of his foot. The average duration in sprains was seven days, in single fractures of the outer malleolus twenty days.

It would take too long to illustrate the simple cases by clinical histories. I shall limit myself to a few typical cases and shall give the preference to the severer one.

Case I.—Man, twenty-eight years of age. Fracture of the external malleolus without dislocation. Considerable extravasation of blood in the ankle-joint. Massage. No bandages. Got up in ten days and walked without a cane. In twenty-two days able to work.

Case II.—Strong laborer, forty-two years of age. Admitted into the hospital November 6, 1888; discharged December 8th; the time, thirty-two days. Fracture of the left internal malleolus; dislocation of the lower fragment, 2 ctm.; foot not actively movable, hanging loose at the ankle-joint; traumatic swelling of the whole leg below the knee. Careful reposition. Massage did not remove extravasated blood as rapidly as usual.

Case III.—Blacksmith, twenty-three years of age; admitted, July 29, 1888; discharged cured, August 20th; time, twenty-two days. Fracture of both malleoli with considerable dislocation of the fragments. Pes varus position. After careful reposition, massage; but as it caused too great pain, it was discontinued for two days; limb placed in Volkmann's splint. From August 1st the pain decreased rapidly. Massage twice a day, ten minutes each time. August 8th, the patient was able to stand on his foot; foot freely movable in all directions.

Case IV.—Healthy sailor, forty-six years of age, admitted October 30, 1888; discharged December 13th; time, forty-four days. Typical Pott's fracture. Foot hanging loose from the astragalo-tibial articulation; an audible sound in making passive movements. Reposition, massage. When discharged had still slight œdema evenings.

Case V.—Typical Pott's fracture. Admitted November 14, 1889; discharged December 12th; time twenty-eight days. Foot after reposition inclined to become dislocated backward, necessitated the use of Volkmann's splint for the first seven days in connection with the massage treatment. Tendency to talipes position; recovery complete. Considerable callus on each side.

Case VI.—Fireman, twenty-five years of age; admitted February 10, 1890; discharged March 5, 1890; time, twenty-three days. Typical Potts' fracture; great extravasation of blood in ankle-joint, which could not be actively moved; no dislocation. No immobilization; massage. February 16th all movements of the ankle-joint painless; beginning callus formation.

Case VII.—Laborer, forty-six years of age, admitted December 6, 1888; discharged February 16, 1889; seventy-two days. Pott's fracture of the left ankle; great dislocation of the foot outward (pronation); considerable extravasation of blood into the ankle-joint. Massage; the foot was held in pes valgus position by wrapping in flannel; formation of callus weak at first; resorption of the extravasated blood followed promptly. On the twenty-first day of treatment, the patient got out of bed contrary to orders and walked about, before the ends of the fracture were consolidated. The foot assumed in consequence a flat-footed position very difficult to correct. Extensive formation of callus did not begin until the eighth week. At the time of his discharge, the ankle joint was freely movable actively and passively in all directions; position of the foot normal; walking without pain.

All these cases were injuries occurring in healthy persons. The period of treatment exceeded six weeks in only one case. This case is given on account of its abnormal duration and the lack of sufficient formation of callus. As a rule, an abundant callus formation is characteristic of the treatment by massage; the periosteum reacts to the formative stimulus of the massage so actively that later on in the treatment the point of fracture had better be left out of the field of massage. According to more recent experience it would be better in such cases to allow the patient to move about with ankle encased in a well-fitted plaster bandage properly padded with a thin layer of cotton. At first, from motives of prudence and because we could not free ourselves entirely from the immobilizing of the joint, we used Volkmann's splint, especially at night. Later, in severe dislocations, as described above, plaster-of Paris and pasteboard bandages were used. If the patient is restless or asleep, or if he has delirium tremens, a light pasteboard bandage may be used.

The duration of the treatment depends not only on the severity of the fracture, the amount of the extravasation and the recurring faulty position of the foot, but also on the general health of the patient, his determination and energy, as well as the skill of the physician and his ability to render the patient able to bear the very considerable pain of the first few sittings. In general, treatment requires longer in women than in men. Contra-indications in the treatment of massage are: Psychical disorders, wasting diseases (tuberculosis, diabetes) as well as all synchronous acute or chronic, septic and pyæmic processes. Injuries to the skin over the region to be treated must be protected against infection by sealing the wound with iodoform collodion and aseptic absorbent cotton.

When the patient again returns to his work œdematous swelling of the injured joint sometimes occurs, or the foot, when too severely used, again takes the flat-foot position. To prevent this the patient must for a few weeks support the injured limb with a bandage of elastic flannel or silk, so as to raise the inner margin of the foot. Leather shoes, not too wide, but comfortable, with a cork sole on the inner side of the foot, prevent an incorrect position. For rapid resorption of the superfluous formation of bone, tepid salt baths may be used and rubbing with an ointment containing iodine and iodide of potash.

The treatment of fractures and sprains must undoubtedly be conducted by the physician himself, and only when no more complications need be feared should the massage be intrusted to a skilful and experienced nurse.

It is to be regretted that massage, the salutary effect of which on the organism has been recognized by the oldest civilizations, such as the Chinese, and later the Greeks,

should be degraded to unworthy purposes in our modern civilization and should be practised by people whose total ignorance of the human organism and the characteristics of diseases occasions more harm than good. I am, therefore, well aware of the difficulties which have yet to be overcome before the practice of massage in its various forms will be taken up by the physician and recognized by the public as a necessary and desirable accessory of the conscientious physician in the exercise of his profession.

Progress of Medical Science.

Renewed Virulence of Staphylococci after a Long Period of Latency.—Dr. Schnitzler relates the case of a patient who, at the age of seven years, received a severe injury to the right leg, resulting in a localized osteomyelitis of the tibia. This subsided in about six months, after discharge of pus and sequestra (*The British Medical Journal*). The patient had been quite free from symptoms, local or general, for thirty-five years, when he was suddenly attacked by severe pain in the former seat of disease, attended by much general febrile disturbance. The signs of localized osteitis quickly became manifest; there was no discharge. On chiselling through the dense and thickened bone at the seat of disease, a closed cavity, the size of a walnut, containing granulations and pus, was found. In the granulations staphylococcus pyogenes aureus was present in a very virulent condition, as shown by inoculation of rabbits. Schnitzler adduces reasons for believing that the cocci had lain dormant in the cavity for the long period mentioned, being brought once more into activity by circumstances unknown. He rejects the supposition that a fresh supply of cocci had been received into the circulation and deposited at the diseased spot. He points out that staphylococcus pyogenes aureus is capable of existing upon nutrient media under unfavorable conditions for a very long period, and argues that a cavity containing granulation tissue well supplied with blood, such as was present in this case, offers a very favorable prospect for the prolonged existence of micro-organisms. There is frequent renewal of nutriment and removal of waste products. The case, in Schnitzler's opinion, shows that pyogenic cocci are capable of remaining latent in the human body for a great period of time, again becoming virulent on some chance disturbance of the normal processes of metabolism.

Starting-Points of Tuberculous Disease in Children.—At a recent meeting of the Medical Society of London, Dr. J. Walter Carr read a paper based on 120 necropsies upon children suffering from tuberculous disease, in which he drew the following conclusions:

1. Tuberculous disease commences usually in the glands, the liability being at its maximum during infancy and early childhood, and rapidly decreasing in later childhood. But, of the 120 cases, the disease had almost certainly commenced in the glands in 70, or 58.3 per cent. (including 13 in which glands only were involved), and in 17 more, or 14.2 per cent., there was considerable probability at least that the glands were the primary focus. Including doubtful cases, the glands formed the primary focus in 64.5 per cent. of those under five, and in only 37 per cent. of those above that age.

2. Tuberculous lesions in the cervical glands, as in the joints, may arise by infection through the bloodstream, but caseation of the bronchial and mesenteric glands, when primary, is usually, if not always due to direct infection from the organ with which they are connected, it having been shown that bacilli may pass through the lungs or the intestinal walls without producing any recognizable lesion, and that they then enter the lymphatic channels and not the blood-vessels.

3. Tuberculous disease starts much more frequently in the thorax than in the abdomen, and certainly far more often in the thoracic than in the mesenteric glands. Of the 120 cases, in 79 the disease probably started in the thorax (in 54 certainly, and in 12 possibly in the bronchial glands); in 20 in the abdomen (in 12 certainly and in 2 possibly in the mesenteric glands); and in 6 in either one or the other cavity. In only 2 cases were the cervical glands the probable primary focus. The conclusion is that, though infection undoubtedly does occur through the intestines, and especially (as experiments on animals have shown) through milk, yet infection through air is by far the more frequent and important. The disease is so commonly generalized in children that figures merely giving the frequency with which different parts are affected are of little value, the important point being to ascertain where the disease is most advanced—that is, where it probably commenced.

4. Caseation of internal glands, from the frequency with which it is found after death, must often exist alone and quite unsuspected, being doubtless in many cases quite impossible of diagnosis, and it is very necessary to realize its frequency and importance when dealing with obscure febrile conditions in children.

5. In regard to treatment, prophylaxis is by far the most important; and as it is probably impossible to prevent bacilli from obtaining access, we must try to increase the resistive powers of the system to their entry, above all by keeping the mucous membranes healthy, by dealing promptly with, and if possible preventing, rickets—the great cause of catarrh in early childhood—and by taking especial care of children during convalescence from acute specific fevers, which so depress the vitality of the body generally, and the resistant power of the mucous membranes, as well as the filtering power of the glands in particular.—*British Medical Journal.*

The Cause of the Mal de Montagne Experimentally Determined.—The Paris correspondent of *The Lancet* writes that it is proposed to bore a tunnel or chimney extending from the base to the summit of the Jungfrau. In this chimney, whose height will be four thousand metres, it is intended to install a lift destined to convey passengers to the top of the mountain; but sinister warnings of the dreaded *mal de montagne*, which, it is said, will surely make the tourist repent his temerity, have brought the project to a standstill. Struck by the fact that this malaise affects mountain-climbers at an elevation of about three thousand metres, while aëronauts only suffer when they have reached double that height, M. Regnard concludes that the difference is explained by the factor, muscular fatigue, which is present in the first and absent in the second case. In order to solve the problem he places under a bell jar two guinea-pigs equally developed, of whom one has to work a wheel (the climber) while the other is at rest (the aëronaut). The air of the bell-jar is then progressively exhausted so as to reproduce the atmospheric conditions obtaining at different heights. At a pressure equivalent to three thousand metres the climbing guinea-pig showed signs of distress, and at four thousand eight hundred metres he renounced the struggle and remained lying on his back. The aëronautic guinea pig, on the other hand, appeared quite comfortable up to an elevation of six thousand metres, and his condition became serious only at a height of eight thousand metres. This experiment appears to prove that, although some of the symptoms of the *mal de montagne* are doubtless due to the rarefaction of the air, the chief determining cause is fatigue, and the resulting exaggerated consumption of oxygen. M. Regnard opines that tourists who venture on the Jungfrau-lift expedition will reach the top in good condition. Should this prognostication be true, it constitutes one more proof of the usefulness to speculators of the much-maligned experiments conducted in the physiological laboratory. Rabid anti-vivisectionists cannot now, however, logically avail themselves of the above-mentioned mode of transit to the top of the Jungfrau.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE ANTITOXIN TREATMENT OF DIPHTHERIA.

THE report of Dr. Biggs to the New York City Health Department on the value of the antitoxin treatment of diphtheria has naturally excited great interest in lay as well as medical circles. The work in this direction was not unfamiliar to our readers, for reports of it have been published from time to time in these columns. It is rather unfair that Professor Koch should be getting the credit, since it is not he who has been making the investigations, but Behring, Aronson, Katz, Surinow and others. Early in August, Dr. H. U. Walker gave an account of the results that had been obtained in Berlin (*British Medical Journal*, August 18th). Katz's report of the employment of Aronson's antitoxin in the Berlin Children's Hospital shows best what the effects of treatment are.

Dr. Ratz states that, "In the last three years, 1891 to 1893, 1,081 cases of diphtheria have been treated in the hospital, of which 421, or 38.9 per cent. died, the mortality in the respective years being 32.5 per cent. in 1891, 35.4 per cent. in 1892, and 41.7 per cent. in 1893. From the commencement of this year up to March 14th, 86 cases have been treated, with 38 deaths, or a mortality of 41.8 per cent. On the latter date the antitoxin treatment was commenced and employed in 128 out of 151 cases admitted to the hospital, 23 cases not being subjected to it for various reasons. In the 128 cases so treated only 17 deaths occurred, the mortality thus falling from 41.7 to 13.2 per cent. In all his clinical observations Dr. Katz is able to say that on no occasion could any deleterious effect be ever attributed to the employment of the antitoxin solution. If renal inflammation did occur, it followed quite a normal course, no bad effect could be observed upon the rhythm or tone of the heart and pulse.

Quite lately Dr. Katz has inoculated 72 children who had been exposed to the disease. Of these only 8 were attacked, and they so slightly as to be free from any evil consequences.

Dr. Thomas Eastes reports, in the *British Medical Journal* of August 25th, seven cases of diphtheria successfully treated by the new method. He also gives a description of the technique which we reproduce here. He says:

"The syringe I have used is Debove's, a beautiful but complicated and expensive instrument. Any syringe will do that can be sterilized either by boiling or immersion for a few hours in a five per cent. solution of carbolic acid, but it is better if it will hold at least 5 c.c. (85 minims). The skin should be washed, and then cleansed with absolute alcohol where the injection is to be made. The dose should be 1 c.c. to produce immunity for any aged over three, half that for younger children. For cure during the first two or three days under two years of age, 2 to 3 c.c.; from two to ten years of age, 5 c.c.; over ten years of age, 10 c.c.; after the third day in a severe case twice as much. If worse symptoms should ensue after the injection the dose should be repeated in twelve hours. It seems doubtful whether any symptoms whatever are caused by the injection, and in cases of exceptional severity larger doses still should be used. Usually there will be distinctly less œdema and a fall in temperature in from twelve to twenty-four hours, and a most marked improvement in the general condition in forty-eight hours. The advantages of this treatment are many in addition to its efficacy. The injection once for all into the tissues of the back gives very little pain, and there is no more interference with the patient required at all—no more painting, spraying, or swabbing the throat, no tearing off false membrane—and consequently a most welcome diminution of suffering and distress."

In this connection it may be stated that simpler methods of preparing an antitoxin have been described by Surinow (*Ber. Klin. Woch.*, July 23d). On the ground of the change from toxin to antitoxin being a chemical one, he has endeavored to induce, by oxidation or reduction processes, properties in the serum of healthy or diseased animals like those possessed by immune animals. Positive results were obtained only by electrolysis. By exposing 100 c.c. of dog's serum to a current of 120 to 140 milliampères from three to four hours, the author obtained a serum which, when injected into animals, produced a rise of temperature. The change produced in the serum is due to an alteration in the albumin. Many animals were infected with diphtheria, etc., and then treated with this simple electrolyzed serum. They all died, however, notwithstanding that a high temperature was produced. The author then took ordinary serum, or its constituents, and inoculated it with diphtheria culture. After some time toxins were produced. A globulin culture was also made, but in this no toxins were developed. The serum or serum albumin cultures were then electrolyzed, and it became evident that the toxins could then be converted into antitoxins. Animals were inoculated with diphtheria, and then treated with the antitoxins thus obtained. Some of the experiments were not successful, but it was thought that a more powerful antitoxin could be obtained. It was found out that electrolysis of a bouillon diphtheria culture also converted the toxins into antitoxins. After a certain time a color reaction is developed in the electrolyzed fluid, and at this time the electrolysis should cease. Some successful experiments are then recorded where the antitoxins from this electrolyzed bouillon were used instead of those from electrolyzed serum or serum albumin. It was found that a single large dose administered subcutaneously was more efficient than divided doses. The antitoxins were harmless to the animals, and preserved their properties for a long time.

SARSAPARILLA, CELERY, AND RED CLOVER.

We have at different times referred to the curious popularity of sarsaparilla and its growing rival, celery. It is abundantly shown that neither of these plants have any real therapeutic properties. A third candidate for popular favor is "red clover," and this seems equally deficient in therapeutic or physiological properties. According to the announcements clover extract has a "great and growing reputation as a blood-purifier, and as a specific for cancers." The number of individuals whose "cancers" are said to have been aborted or dispersed by clover-tea is legion. It is not only good for "cancers," but for other morbid productions, even "carbuncle" and "scrofula."

It is needless, says the *Boston Medical and Surgical Journal*, to say that no medicinal principle has yet been obtained from the trifolium. We shall expect next to see an extract from the potato or turnip vaunted for cancer or syphilis! There is, by the way, still a belief in certain localities that the tomato is a cause of cancerous growths! Our contemporary adds: It is hard to account for the repute that clover has acquired among the laity of this country as a remedy for cancer. In many parts of New England we know it to be almost impossible for a person to have a suspicious growth of any kind without being urged to take clover, and the urging is persistent. In a certain neighborhood near Boston, one woman, afflicted with growing scirrhus, is said to have consumed in extracts and infusions of red clover the product of a ten acre lot; but without saving her life. The fact that the cancers do not disappear, despite the free use of the antidote, appears to detract in no measure from the sale or use of the preparation.

There is no sound basis for the reputation which red clover has acquired, and the only persons who have ever derived any advantage from the use of clover in cancer, furuncle, or various "humors," are the venders of certain extracts, fluid and solid, which are in growing demand.

THE GAS HABIT.

The so called "exposures" made by the daily papers are often sensational, exaggerated, and unjust. A reporter of *The Herald*, however, has done some service by investigating one of the compound oxygen establishments in this city. Oxygen is a substance which to the lay mind represents all that is fresh and pure and life-sustaining in the line of gases. "Compound oxygen" is a term which gives the impression that it is something several times better than oxygen. Hence it is a name that has long been popular with the fakirs. Some advertised preparations of it have been inhaled, some taken internally, all with the result of receiving numerous testimonials. The establishment whose methods have lately been exposed dispensed under the name of "compound hydrogen" a gaseous mixture of about two parts nitrous oxide and one part atmospheric air. This was administered by means of an elaborate apparatus which enabled the patient to recline at his ease and inhale the gas slowly and intermittently. The stimulant effect of the mixture was thus obtained without inducing anæsthesia or unconsciousness. Patients describe the effect as very delightful, and many returned for weeks and months in order to enjoy this seductive form of inebriety.

There seems little doubt that a gas habit or a form of gas-inebriety can be induced by this promiscuous administration of the "compound oxygen." One case indeed is on record (Kobert's *Intoxicationen*) in which a person acquired the habit and eventually became insane. The ether habit and chloroform habit are well known, and there is no reason to doubt that given the opportunity, the nitrous-oxide habit may be formed also. The effects of this gas are usually very temporary and it would require a good deal of time for serious results to ensue, provided the anæsthetic were given with care. But it is well known that nitrous oxide is not a perfectly safe substance. Deaths from its use have occurred, and cases of serious nervous disorder are reported to have followed its administration. It is in fact a poison, and we believe that it should not be administered except under the direction of duly qualified persons. The dispenser of the "compound oxygen" is said not to be a physician, and he certainly is not registered as such. Establishments for giving nitrous oxide to patients would come in the same class as establishments for giving chloroform or ether or administering hypodermics of morphine. There is no use for such places; they do not subserve the public good; they are, on the contrary, dangerous, and we should judge entirely unlawful.

It is about time that "compound oxygen" humbugs were exposed and the people made acquainted with their true character.

THE TREATMENT OF CHRONIC HEART DISEASE BY BATHS AND MASSAGE.

The mechanical treatment of chronic heart disease has now been accepted by the profession as having a certain, though limited, value. This treatment, as oftenest employed, consists in regular pedestrian exercise over fixed courses which, as a rule, have a gradual ascent. Gymnastic exercises at home, and baths, supplement this.

In addition to this method of cardio therapy, we hear periodically of the special method devised by the brothers Schott, of Nauheim. A pilgrim to that spot, Dr. W. Bezly Thorne, has recently described again the remarkable efficacy of the Schott treatment, and has reported a number of illustrative cases (*Lancet*, May 5, 1894). The patients who are treated at Nauheim follow a method which has been elaborated "after eighteen years of study," though we doubt if there is much difference between what is done now and what was done eight years ago. The measures employed consist of baths and passive and active movements known as *Widerstandgymnastik*. The most frequently employed are those containing one and a half per cent. of sodium chloride, one and a half per thousand of calcium chloride and salts of iron, with a variable proportion of carbonic acid gas. They possess a natural temperature of 88° to 95° F. The baths are given daily, and are followed by an hour's repose in the recumbent posture; while in the bath the patient is subjected to various movements. The extremities are slowly flexed, extended, abducted, adducted, rotated, etc., by the operator, while the patient breathes slowly and makes resistance.

The effects are manifest in a diminution of cardiac dilatation and slowing of the pulse rate. The exact technique, of course, can only be acquired by experience, but the baths themselves can be artificially prepared, and there seems to be no reason why physicians in this country should not be able to apply successfully the treatment.

THE PNEUMATIC CABINET.

Those who have heard that, some four years ago, the last of the stock of pneumatic cabinets had been sold for old iron, will perhaps be surprised to know that Dr. C. E. Quimby, according to a reprint just received, has not given up his instrument nor allowed this method of treating phthisis to pass wholly into oblivion. While acknowledging his ignorance of what the cabinet can do alone in the cure of phthisis, he claims to demonstrate that, scientifically applied, it must act favorably in conjunction with other measures of proven value. After six years' experience, the writer believes that "from seventy-five to eighty per cent. of localized tuberculosis, if seen reasonably early in the first stage, can be brought to and kept in a condition of practical cure by the use of the pneumatic cabinet and adjuvant measures other than climate." Disseminated tuberculosis subacute and third stage cases are found to be correspondingly relieved and benefited.

The alternation during each respiration of negative differentiation and negative pressure is, the writer believes, the most comprehensive motion of the cabinet, and one which has received little attention. The value of full inspiration until circulatory equilibrium is established and exhalation into the rarefied air of the cabinet, is explained, and it is shown how the blood is pumped into and out of the lung in the physiological direction without increase of vascular tension.

In fine the claim is advanced, that the cabinet acts curatively, to a greater or less degree, upon all the factors of phthisis except the bacillus itself.

News of the Week.

Further News About Diphtheria Antitoxin.—In the *Berliner klinische Wochenschrift* of September 3d, Behring publishes a paper, in which, among other points, he deals with the question of dose. He states that the serum prepared and tested under his own supervision and that of Ehrlich is now issued in two forms—No. I. and No. II.; No. II. is two and a half times stronger than No. I. No. I. is sufficient for the treatment of a case of diphtheria in a child under ten years of age, if it be seen on the second or third day. In cases of longer standing, in those of a very severe type in young children, and in adults, a repetition of the injection will be necessary. No. II. serum acts more surely and rapidly in these cases, but, owing to the difficulty of rendering the animals sufficiently immune to provide a serum endowed with immunizing powers so strong, a constant supply cannot be insured. The estimation of the exact strength of the serum is a difficult matter, and it must be recognized that the strength is liable to vary with the commercial source from which it is obtained. Behring and Ehrlich have devised a method of expressing the strength in figures. Their No. I. (quality and quantity) contains 10 c.c., which is equal to 600 antitoxin normals, and is sufficient for one case with the limitations already mentioned. No. II. contains 11.5 c.c. of a strong serum, and is equivalent to about 1,500 antitoxin normals. Behring now estimates that the death-rate of cases treated within forty-eight hours of the onset of the disease with No. I. ought not to exceed five per cent. The dose to be injected as a prophylactic in persons liable to be exposed to diphtheria is set down by Behring at 60 antitoxin normals, or one-tenth of No. I. After infection, that is during the incubation stage, he believes that 150 antitoxin normals ought to avert the development of the disease.

M. Crispi will soon be operated upon for cataract.

A Monument to Volkmann was unveiled on September 4th, and one to Dr. Testelin, of Lith, on the same day. A monument to Quatrefages has recently been completed.

Dr. Theophilus Patterson, of Salem, N. J., died at his residence in that city on September 7th. He was born in Salem County in 1827, and was graduated from the Jefferson Medical College, Philadelphia, in 1848, being a pupil of Dr. J. K. Mitchell, the father of Dr. S. Weir Mitchell. He almost immediately began practice in Salem and lived there in the active exercise of his profession for forty-six years. He was always interested in educational matters, and was largely instrumental in raising the standard of the public schools in Salem during a number of years in which he held the office of city superintendent. A wife and four children, one of them also a physician, survive him.

Dr. Horace Ingersoll died a few days ago at Salem, Mass., at the age of eighty-three. Besides medicine he also, at different periods, studied and practised theology and law. He was a friend of Hawthorne, and was credited by the latter as being the one who suggested the incidents in the "Scarlet Letter."

Cycling in Paris.—A Paris correspondent writes that there are over one hundred thousand cyclists in that city, that nearly all the leading physicians ride, next come the lawyers, then the deputies, officers, and even the Institute; the family physician prescribes the exercise as the most health-giving ever devised.

Japanese Nurses.—A corps of trained female nurses has been despatched from the Tokio Training School to the military hospital at Seoul, and others are being trained for this service. Throughout all Japan, it is said, the women have caught the war fever, and the greatest enthusiasm prevails. A number of women of high rank have offered to go to the seat of war as volunteer nurses, and others have even offered to raise a corps of female soldiers.

A Quick Answer.—A correspondent sends us a story told of an old country doctor down East. In the latter years of his life his ankles became very weak, necessitating the wearing of a pair of steel braces. One day, as the old gentleman was shuffling along on Exchange Street in Bangor, Me., some young wag called out: "Hi, doctor, hi, you are interfering!" "Not with other folks business, young man!" retorted the doctor.

Yellow Fever of a malignant type is reported to be epidemic in the coast regions of Nicaragua.

Traction on the Tongue in Hysteria.—Th. Balade (*Gaz. des Hôp. de Toulouse*, July 28th) has in two cases made very violent hysterical attacks cease by traction on the tongue, the organ being drawn with some force out of the mouth, and kept in that position for some minutes. This procedure was successful when every other treatment had failed.

Dr. S. Hembury Smith died on September 12th, in Brooklyn, N. Y. He was born in England in 1810, and was graduated in London in 1831. He studied later and practised in Stockholm; he came to this country in 1847, settling in Cincinnati. He afterward came to New York, where he was engaged for a number of years in the manufacture of artificial mineral waters.

To Celebrate the Discovery of Anæsthesia.—Mr. Charles J. Wells, of Hartford, is announced to be the only living descendant of Dr. Horace Wells, the discoverer of anæsthesia. He is said to be taking a deep interest in the arrangements now in progress for celebrating the fiftieth anniversary of his father's great contribution to surgical practice. Mr. Wells has been consulted by the committee from the Connecticut Dental Association, which has charge of the arrangements in this city, and is in complete accord with the project for a bronze tablet to be placed on the site that was occupied fifty years ago by the discoverer's office.

What a Maniac can Stomach.—One of the medical officers of the County Asylum, Lancaster, contributes to *The Lancet* an account of an operation upon a lunatic from whose incoherent statements it was suspected that he had swallowed some nails. Forceps passed into the stomach having failed to extract any foreign bodies, though they could be felt from the outside; it was decided to attempt to relieve the man by operation. On incision, the stomach was found to be occupied by a mass of rusty nails, many of them nearly three inches in length, and some very sharp, bent, and twisted. Their removal, naturally, was very tedious, as many of them could only be extracted one at a time. A piece of matted hair, nearly two inches in length, was also found. In all, there were removed from the stomach one hundred and ninety-two nails (the majority being two and a half inches in length, and many even longer), half a screw-nail, a piece of brass wire, a carpet tack, several small pieces of stick, a button, and the mass of hair already mentioned. The whole weighed one pound nine and one-half ounces. Several pieces of wood were found in the patient's intestines, but no nails.

The Country Doctor and Post-Graduate Study.—The editor of the *Post Graduate* has made an interesting analysis of the place of residence of three thousand eight hundred and twenty-four matriculates of the New York school. The students were divided into four classes, according as they came from large cities, having a population of over one hundred and fifty thousand; medium cities, having a population of over twenty-five thousand; small cities, having a population of over ten thousand; finally towns and villages. We find from the figures that have been furnished us that there is a pretty even distribution of matriculates in all four classes. The towns and villages, however, rank at the bottom with six hundred and ninety-five students, while the medium cities are at the top of the list with eleven hundred and four. On the whole, one can see that it is the medium cities and large towns that furnish the greater number of matriculates. The number from the large cities is relatively small. Another interesting fact which is developed by the study of tables is this: The physicians from the towns and villages are coming to us in increasing number every year. During the first four years of the school, not more than twenty-five or thirty came from this class, but in the last year or two the numbers have exceeded one hundred, and last year the villages and towns of the United States furnished as many students as the large cities.

This, adds the editor, is certainly an interesting, and we would add a hopeful, sign. It shows that the doctors in the smaller places are making a living, and a little more, and what is still better, it shows that they possess a desire to keep abreast of the times, and that this desire is even keener than that which the city physicians have; for it must be remembered that it requires no small sacrifice for a country doctor to leave his practice, turning over his patients to the care of a brother physician with whom his relations may, perhaps, have been sometimes a little strained, and of whose experience and skill he has, perhaps, himself once expressed a slight amount of doubt. But it is evident that a country doctor is bound to learn, and that he is learning and is keeping as alert in every direction as his city brother.

The Late Dr. Albert B. Miles, House Surgeon of the Charity Hospital of New Orleans, left $10,000 each to the following institutions: Medical Department Tulane University of Louisiana; Charity Hospital of New Orleans; and the Hotel Dieu, also of New Orleans.

Fighting the Diploma Trade.—Dr. C. T. Metcalf, Secretary of the Indiana State Board of Health, has instructed the county boards of health to notify clerks of court to refuse licenses on the diplomas of the "Marion Physico Medical School of Indiana and Marion."

Physicians' Protective Association.—The first annual meeting of the Physicians' Protective Association of Detroit was held September 4th. Reports of officers showed a prosperous year, $9,916 in outstanding accounts having been collected. Officers for the ensuing year were elected as follows: *President*, Dr. L. J. Lennox; *Vice President*, Dr. R. H. Stevens; *Secretary*, Dr. P. M. Hickey; *Treasurer*, Dr. S. H. Knight.

The Office of Coroner to be Abolished.—The Constitutional Convention at Albany has adopted the first amendment abolishing the office of coroner in this State as a constitutional office. The purpose of the amendment is said to be to make it possible for the Legislature to provide that only physicians shall exercise the duties now performed by elected coroners.

The Medical Society of the Missouri Valley held its seventh annual meeting in Council Bluffs, Iowa, on Thursday, September 20th. The programme contained the titles of twenty-five papers presented by members of the Society from Missouri, Iowa, and Nebraska. Dr. A. F. Jonas, of Omaha, was President, and Dr. F. S. Thomas, of Council Bluffs, Secretary.

Obituary.

BEAVEN NEAVE RAKE, M.D.,

TRINIDAO, WEST INDIES.

With profound regret we notice the death of Dr. Beaven Neave Rake. A cablegram received in London announced the sad event. He died in Port of Spain, Trinidad, British West Indies, August 24th, of fever—presumably, yellow fever, as it has prevailed there in epidemic form for several months past.

Dr. Rake was one of the world's recognized specialists in leprosy. He had made its study the work of his life. *The Lancet*, London, September 1st, referred to him as having been "one of the greatest authorities" on that disease.

Ere entering on the study of medicine and surgery he had received a thorough classical education. He became a member of the Royal College of Surgeons of England in 1879, a Licentiate of the Royal College of Physicians of London in 1880, a Bachelor of Medicine, University of London, 1881, and a Doctor of Medicine of the same in 1882. He had had seven years' hospital experience in London, one year on the Continent, one year in the East Indies, studying leprosy, and nearly ten years as Chief Medical Officer at the Trinidad Lepers' Asylum.

He was a member of the Pathological Society of London, the British Medical Association, Pan-American Medical Congress, Washington, 1893, Trinidad Medical Society, etc., etc.

He was a faithful and indefatigable worker, a man of keen perceptive powers and sound judgment. His early training had eminently fitted him for the government appointment at Trinidad. He was an able and prolific writer. His original observations have been published in England in *The Lancet*. In America the Medical Record published his last paper—being a concise summary of his observations. That paper, specially prepared, appeared in its columns a few months ago.

All students of leprosy will remain profoundly grateful for the veritable "arsenal of facts" that he has left on record. His name will ever rank as an original worker and thinker.

While on the Anglo-Indian Commission he and his associates examined the histories of over two thousand cases of leprosy; in but two instances could contagion have been a factor; sensationalism in medicine he deprecated. For twenty-eight years past the Sisters of Charity have had exclusive charge of the Trinidad Lepers' Asylum; not an instance can be cited where they have become infected.

At the Pan-American Medical Congress he read a paper on leprosy before the Section on Dermatology, and addressed the Sections of Hygiene and Climatology on the same.

Death, in selecting him at the early age of thirty-six, has taken from us a bright and shining light; but "his good works will live after him." He died like a brave soldier, fighting disease during an epidemic. He had warm friends the world over. The warm shake of the hand, the frank, manly glance of the eye, will be remembered. He was one of God's greatest works—"a true man." His genial manners and quiet dignified way have left a living impress on his time and profession. He leaves a widow and three little sons. The highest compliment that can be paid a member of our profession is his first due—"He did his duty."

A Comfortable Ailment Desired.—Lady medicals are at times hard pressed for patients, as the following little wail will show: "Wanted—the care of an invalid lady of means (comfortably ill), who will appreciate best of medical skill and competent nursing; with kindly, sympathetic attention. Address Lady Physician, Herald Agency, 708 Columbus Av."

Clinical Department.

TABES DORSALIS IN A WOMAN TWENTY-THREE YEARS OLD.

By L. PIERCE CLARK, M.D.,

MIDDLETOWN, CONN.

This case of tabes dorsalis in a woman but twenty-three years old, came under my observation when I was house physician at the workhouse hospital, on Blackwell's Island. She was admitted to the hospital and remained there for four weeks, during which time she made little or no improvement.

Five years previous to her admission she contracted syphilis in a very severe form, and its treatment was almost entirely neglected until the tertiary symptoms made their appearance, when she took the baths at Hot Springs, Ark., for six months. But they gave her little relief. For seven years she had used alcoholic stimulants, taking sometimes twenty or thirty drinks a day. The remainder of her history is as follows:

Name A. D——; aged twenty-three; single; had been a prostitute for six years; family history good. She had never been sick before her present illness; at least not sufficient to incapacitate her for her abnormal occupation. The present attack began about eight months prior to her admission to the hospital. After one of her usual debauches, lasting four days, she complained of faint and dizzy sensations, which came on every three or four days, and lasting only an hour or so. These attacks gradually increased until they were of almost daily occurrence, lasting three or four hours each time.

One month from these first symptoms of dizziness, etc., vomiting and sharp lancinating pains in the epigastrium began. The vomiting was projectile in character, and the pains in epigastrium radiated from a central point in all directions, especially toward the vertebral column. This attack was also attended by purging. It lasted for two days, during which time she was obliged to remain in bed. Notwithstanding the severity of the attack she recovered, so as to be about on the third day, and was as well as ever, save the faint and dizzy sensations which continued to trouble her greatly, when she had taken considerable exercise. For the next five months she used stimulants very freely.

At the time of her admission to the workhouse on the charge of "soliciting," she had the appearance of one who had been suffering from syphilis and the abuse of alcohol for a long time, although she was in fair physical health. She was unable to walk to any great extent, and complained constantly of sharp, darting pains in legs, inability to see clearly, and occasionally saw double. These eye symptoms had been more or less prominent for past two months.

Physical examination revealed entire absence of knee-jerk, immobility of pupils, the right being a little larger than the left. The girdle sensation was present around upper and lower abdomen. There was swaying on standing and the gait was markedly ataxic. There was also present some inco-ordination of upper extremities. The feet were numb and cold, and the cutaneous sensation to pin-prick was perceptibly delayed and diminished over lower extremities.

On her discharge her symptoms remained about the same, except the gait, which showed some improvement, probably because the alcohol had nearly all left the system.

This case was diagnosed on admission as one of alcoholic neuritis, because of her alcoholic condition at the time of her arrival at the workhouse, and the subjective symptoms. But upon obtaining a syphilitic history, and the presence of the effects of syphilis yet remaining, together with the absence of a great many of the symptoms found in alcoholic neuritis, such as diminished motor power, tenderness along course of nerves, and

atrophy of any of the muscles, we had sufficient evidence to cause a more careful inquiry into the case, which resulted in the above diagnosis of tabes dorsalis. No mental symptoms were present.

It is just possible that a peripheral neuritis of alcoholic origin was present in this case together with tabes.

The early vomiting, pains in epigastrium, and purging which came on without any apparent cause and disappeared entirely in two days, seems to me to be a form of visceral crisis quite frequently found in tabes. I think the case is one of considerable interest, as it is an instance of tabes dorsalis in a young woman but twenty-three years old.

Her after history is unknown, as she passed from under my observation after leaving the hospital.

REMARKABLE USE OF BICARBONATE OF SODIUM.

Dr. Robert G. Feek, of Hamilton, N. Y., writes: "William G——, who resides in the town of Dekalb, near Hamilton, St. Lawrence County, N. Y., was suffering from disease of the stomach about twenty-five years ago. He states that he spent all his earnings in doctoring till about twenty-one years ago, when he tried saleratus, which gave him relief. Since then he has used it constantly and is now using the twenty-second hundred pounds. He carries it with him wherever he goes. He is sixty one years of age, father of eleven children, and does all the work of a farm of one hundred and ten acres except an occasional extra help. He purchases his saleratus by the barrel. These statements are authentic, as inquiry will prove. The saleratus is taken in a dry state. At first it was taken in small quantities, but now in doses of one-half ounce, and to the quantity of over two pounds a week."

A FOREIGN BODY IN THE EYE FOR SIX YEARS.

By THOMAS M. STEWART, M.D.,

CINCINNATI, O.

Cases of foreign bodies in the eye are interesting to eye surgeons, because of the many important questions that they involve. The case herewith reported is interesting because of the length of time the foreign body was retained, with the history of pain and redness, and absolutely no irritation occurring in the sound eye.

The patient was a married man, aged forty years. Six years previous to his first visit to me, while watching miners at work, a piece of coal struck him in the right eye. He was at once removed to his home, and a surgeon summoned. After some weeks he was discharged from the surgeon's care, but with a blind eye. The iris was occluded, the small pupillary space presented to view a cataractous lens. Subsequently, the man sought medical aid for the relief of severe lightning like pains in the injured eye. The pains continued from time to time. I found the eye a little red, no pains on palpation of the ciliary body, but pressing the eye backward and a little outward, he complained of severe cutting pain. He was then taking morphine for the relief of the pain; he took several one-fourth grain pills every day, and when the attacks were very severe he took more.

From the history of the case, evidence of having been struck in the eye by a flying missile, the occluded pupil, cataractous lens, and the history of pain from the time of injury, I advised enucleation. Two days later he gave his consent, and the eye was removed in the ordinary way. Adhesions were cut away at the back of the globe. Section of the eye showed the adhesion of the iris to the opaque lens, and the vitreous was dark brown in color. Close to the optic nerve was found an enlargement, due to a piece of coal 6 mm. square, ragged at one end. This pushed the sclera backward, and had become firmly imbedded. A firm adhesion also held it to the nerve.

The question of enucleation had been considered, but it was thought that the pain was entirely neuralgic, coming in paroxysms aggravated by change in temperature and humidity of atmosphere. The sound eye had been interrogated for recession of the near point, and other symptoms of sympathetic inflammation. These points determined his medical advisers upon no interference.

To my mind there was no question as to the necessity for operation, it was a clear case for the rule to enucleate an eye subject to attacks of redness and pain, the vision of which has been destroyed by an injury.

THE SWALLOWING OF A HAT-PIN, AND ITS SUBSEQUENT EXTRACTION.

By THOMAS B. STEELE, M.D.,

CAMBRIDGE, MD.

I had yesterday, July 15th, the most extraordinary case of surgery I ever saw, or that has ever occurred in this part of the country.

About three weeks ago I was called in to see a colored child (female) a little over three years old. She complained of severe pain at the inner extremities of the two lower ribs of the left side. She kept her body constantly bent over to that side as far as she could get it, and a little forward. In this position she was somewhat relieved, but was never entirely free from pain. She had but very little fever, if any, and her appetite and digestion were fairly good.

About ten days ago a protuberance the size and shape of section of an ordinary hen egg, made its appearance just over the seat of pain. As her mother and the rest of the family insisted so strongly that nothing had occurred to account for her symptoms, I was forced to the conclusion that by some forgotten accident the cartilages at the enlarged spot had been dislocated from the ribs, or a growth of some kind, most probably an abscess, was forcing its way there to the surface. Last night I was sent for in a great hurry to see her, as the sharpened end of a hat-pin had made its appearance through the middle of the lump. And such I found to be the case. By slight pulling the pin would come out five or six inches, but was retained by its large bullet shaped end.

The pin penetrated the cartilage of the eleventh rib, instead of coming out between the ribs, where there was less resistance, and as nothing could be done without keeping her constantly under the influence of chloroform, and I could not do so unassisted, I sent for Dr. B. W. Goldsborough. After some difficulty he succeeded in enlarging the opening in the cartilage and in extracting the pin.

Last night her mother remembered that some children told her the child had swallowed, the day before she complained of being sick, a hat-pin, but she thought it so unlikely that it had escaped her memory. This morning she is more comfortable. Rather a large quantity of water flows from the opening, which shows that it connects with the stomach.

A Patient in one of the Paris hospitals was recently scalded to death in a bath through negligence of the nurse.

Breast Tumors in Women.—A "lump in the breast," previously to twenty five years, may often be "severely let alone;" one after thirty five can be disregarded only by the surgeon who is reckless to the verge of criminality.—Dr. Herbert Snow in *The Practitioner*, August, 1894.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

VACATION—CHOLERA PROSPECTS—THE OPIUM COMMISSION—THE REPORT OF THE LUNACY COMMISSIONERS—THEIR VIEWS ON BEER.

London, September 1, 1894.

London is just now more depleted of her doctors than during the brief meeting at Bristol, for a considerable number have set out on their autumnal holiday. In the few Bristol days we had scarcely time to miss them, for those who went—or a large proportion of them—returned to town before leaving for any length of time. The appearance of "students' numbers" of the journals is an indication that the opening of the winter session is only just a month ahead. Then the active teachers will be obliged to be at home, and even the fashionable consultants will begin to return.

We have passed the first of the two most dangerous months in respect to cholera; but September has several times been a month of invasion, and as the disease is still epidemic on the Continent the danger is obvious. Hitherto the weather has been in our favor, but there is now a prospect of hot, damp days, which, if long continued, may cause any seeds sown last year to spring up. Whether we are to escape altogether or suffer from such recrudescence, or to be invaded afresh is therefore a favorite topic of conversation and the speculations indulged in are sometimes more curious than instructive. After a long spell of cool, wet weather, the last two days have been hot, yet dull and misty. The ground in the country is no doubt saturated with moisture enough to give us a damp atmosphere as the sun pours down its rays. If cholera invade us it will therefore have a condition favoring its spread, and with all our sanitarians' efforts it is impossible to pronounce all our defences to be impregnable. The Local Government Board are prepared to act with energy. Inspectors are ready to visit suspicious cases, and provision is made for a bacteriological examination of fæces forwarded with a clinical record of the case. Expert advice and assistance is therefore at the disposal of those who may have to meet suspicious cases, and in the country the officers of health seem equally ready with help. If any port or sanitary authority should be caught napping the results may be disastrous, but we may still hope this will not happen.

The report of the Opium Commission will, I understand, not be issued until Christmas, but rumor is pretty busy as to its contents. Some persons profess to have precise information—others are evidently guided by their judgment of the evidence. The former say the report will be unanimous, and I hope they may be right, for that would probably deliver us from the "opium question" for some time to come. Both former and latter agree that the report will be conclusive against any interference by the state with the cultivation and use of opium. If so, it will be in accord with the evidence tendered by those medical men who have had the best opportunity of judging by their residence and official positions in India.

I may recur for a moment to the Lunacy Report, which I have previously noticed. In some quarters surprise is felt at the prepossession of the commissioners in favor of beer in the dietary. Again and again regret is expressed in the reports at the absence of beer or something else. Thus, respecting the Surrey Asylum, the remark, "workers only have beer," is evidently made in a deprecatory spirit. At Norwich it is remarked, "One gentleman complained of the stoppage of the dinner beer, which, we understand, has been general throughout the hospital." At Colney Hatch the commissioners observe, "Beer is not given to the workers, which we regard as a mistake, as it keeps down the percentage of employed patients." It is curious that encouragement should thus be given to the plan of inducing patients to work by paying them in beer. The commissioners defend their approval of intoxicating beverages thus: "The asylum is not a reformatory; and claiming to be advocates of temperance, which total abstinence is not, we think that the withdrawal from the temperate of their past life's beverage irritates, whereas every effort should be made to alleviate the morbid discontent of the sober patients, in proportion to whom the drunkards are few. These last, if in the incipient stage of their vice, so soon recover that they must be discharged too soon for the eradication of that vice; if they be old stagers, they come to the asylum wrecks of humanity, and their condition is too chronic for discharge, except through death. We deem it our duty to repeat our colleagues' objections in 1892 to what is in no sense a proceeding in the cause of true temperance, which is the avoidance of excess." I am not inclined to controvert this curious manifestation of the commissioners' penchant, nor would I go so far as to assert that a glass of small beer would have an appreciable effect on the majority of the patients. But I cannot compliment the commissioners on their logic, and there are other issues involved, as there are also in the case of workhouses, as to which the beer question is continually cropping up. The rate-payers may object to provide this luxury to persons who in large proportion owe their distress to too free indulgence in it. Then these very reports contain a series of tables, some of which show the predisposing and exciting causes of the patients' lunacy. As may be anticipated these statistics confirm those with which your readers are familiar, and prove the terrible rôle that alcohol plays in the production of insanity. I think the comissioners would find a difficulty in expounding these figures so as to support their views, which certainly do not seem quite up to date from a scientific point of view. It will therefore not surprise me if some controversy should be raised on the question.

WHO IS TO BLAME?

To the Editor of the Medical Record.

Sir: One of the great and much admired minds of the century has emitted the sentiments that,

> "Work without hope draws nectar in a sieve,
> And hope without an object cannot live."

After a fashion these lines were recalled to my mind by Dr. McGee's ardent letter published in to-day's Medical Record. The lines of the poet-philosopher can be applied to the evil complained of by Doctors Cochran and McGee, and many other good men, both as to its cause and its therapeutics.

Dr. McGee would have "one good general law" for limiting the number of medical colleges, and the number of medical colleges being limited by law, he would expect "a better satisfaction to the profession" to follow. Another blessing flowing from this law of numerical limitation would be, Doctor McGee says, "at least more than a show of real protection for the people." May one not ask why the "better satisfaction" of the profession needs the protecting hand of the lawyer? Law means lost innocence, lost manliness, and as a prohibitive help positive only by negation. What does "real protection for the people" mean? Is the profession becoming a band of beggars because this very profession in some sections of the country is developing medical schools and professors in superabundance? Quite the contrary. Those medical men who are impoverishing the profession by making it cheap, and who besides are committing a sort of wholesale homicide by inundating the public with medical humbugs very much after their own pattern find the business profitable. And while such business pays such men, can any other conclusion be drawn than that both the public (the people) and the profession rather like it? All things thrive by what they feed on, and the schools and the professors of whom complaint is made are no exception to this natural law.

The people who will have them deserve to have them. Why do these particular men hurry to establish schools and make themselves professors? It is because they hope to gain power thereby, and to turn that power and *éclat*—the prestige of a name—into money!

If they are not honorable men, they are ambitious and they are practical. They do not weave the cloth of gold from moonbeams. Their hopes are very material, and their object extremely selfish. They are not idealists. Indeed they resemble Napoleon I. in their hatred of idealists. Now the idea of professor is an actual idealism with the great body of the laity. It is not the legal conception. It is often an idealism that borders on the mythical. The professor of medicine (or surgery) to most layman is a man who knows when the practitioner does not know. The professor to the layman is the man who can do when the practitioner fails or is powerless. The professor to the layman is the man who has done his best to make the practitioner a capable man. The people have an ideal doctor in mind when they think of the medical professor. And it is this ideal that these would be medical schools and their would be professors deflower, and make the most of to their own selfish satisfaction. We must not be too hard in our judgments of the people just because a laudable ideal is theirs. The people are always right in the end, only it takes them such a long while sometimes to distinguish between brass and gold. Then, too, are not the better elements in and out of the profession parts of the people? The making of prohibitive laws, or agitating for them, are worthy ways of letting loose our altruistic and philanthropic propensities, when we do not forget our other and more important social and professional obligations. It is no more than just that every philanthropist, altruist, and ameliorist be the model he is clamoring for some one else to be. And besides clamoring for legislation—which is right in its way—each decent practitioner, as occasion offers, can do a good deal toward killing away the falsehoods on which the evils under consideration feed, by themselves emulating the lay ideal of the professor, and by teaching the laity who are and who are not not legal professors, but real and worthy professors. Perhaps decent and intelligent practitioners have contributed more than a mite toward the making of the layman's myths, and from which they feel ill effects every now and then.

ADOLPH RUPP, M.D.

NEW YORK, September 8, 1894.

HYDROPHOBIA STATISTICS DESIRED.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Will you permit me, through your columns, to ask that my professional brethren will communicate to me the occurrence of cases of so-called hydrophobia in their practice for the year 1894, from January 1, and so on until the end of this year?

I would like in all cases to learn: 1, The sex and age of patient; 2*a*, the kind of animal that is credited with the inoculation; 2*b*, its state of health; 2*c*, the provocation to bite (if any existed); 2*d*, the reasons why the animal was (if it was) deemed rabid; 3, the seat of the bite (or other mode of inoculation); 4, the fact and method of cauterization (if any); 5, the time between the inoculation and the outbreak; 6, the symptoms of the outbreak, the occurrence of mania or imitation of dog actions; 7, the remedies used and doses, with their seeming effect; 8, the issue of the case and when death occurred; 9, the investigations made to exclude the presence of disease other than so-called hydrophobia; 10, the findings on autopsy, if one was held.

I shall, of course, acknowledge in future publications aid received in continuing my studies in regard to this subject.

Yours respectfully,

CHARLES W. DULLES.

4101 WALNUT STREET, PHILADELPHIA, PA

"THE PHONOGRAPH; ITS PHYSICS," ETC.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: An article under the above title appeared in your issue for September 1, 1894, by J. Mount Bleyer, M.D., from which I quote the following: "Photographs and measurements of these tracings of the sound-waves on the wax cylinders, etc., were recently made by Herman, of the Königsberg Physiological Institute, and are of great interest in the study of the physics of sound." I desire to call attention to the fact that drawings and measurements of tracings of voice records upon a wax cylinder of a phonograph were made by me in 1888, and the same, with an article entitled "A Study in Physiological Acoustics—Preliminary Notice," were sent to your journal for publication.

The article appeared in the RECORD for November 17, 1888, p. 589, but the graphic representations were not published because you did not have space. In the article by me I state: "I have shown the number of vibrations to inch, entire length of letter or word, total number of vibrations to each, and also depth of imprint." If there was a disposition to credit our own countrymen for scientific research and investigation more, and less tendency to look abroad, it would be better for the profession and our country as well.

J. A. MALONEY, M.D.

1424 Q STREET, N. W., WASHINGTON, D. C.

A FALSE REPORT OF PREMATURE BURIAL.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Some time ago a patient handed me a slip cut from one of our daily papers, wherein was related, with the usual minute detail, a case of "Buried Alive." The incident was said to have happened near the town of Lester, Minn., and the victim was said, upon disinterment, to have been found completely turned upon the face, the flesh torn by the finger-nails, and the hands filled with hair torn from the head. As my patient was a lady of nervous temperament, who dreaded for herself or husband a similar terrible fate, I determined to run the lie to earth, and, accordingly, wrote to the postmaster, inclosing the slip, and asking him to report. The following is his reply:

LESTER, MINN., August 23, 1894.

DEAR SIR: In reply to your request will say, that I have taken time to thoroughly investigate the matter and find "*it is not true.*" It is true he was removed, but, he was found in the coffin the way he was placed there. I never heard of the matter until I got your letter.

Respectfully,

C. O. PERUSIS.

And that is all the foundation there was to this tale.

S. S. J.

A Simple Remedy for Cough.—Dr. Charles E. Page, of Boston, says that the best remedy for cough he has ever found is a teaspoonful of moderately hot water, taken every time a paroxysm of cough comes on.

Intra uterine Injections in Antiquity.—At a recent meeting of an Edinburgh medical society Dr. Ballantyne quoted from a paper by Dr. Koromilas, a Greek physician, in which it was claimed that there was evidence in the writings of Hippocrates, Oribasius, Paulus Ægineta, and Galen to show that these authors were acquainted with the use of intra-uterine injections. Hippocrates divided the generative organs into three parts—first, the external genitals; second, the genital organ or vagina; and third, the uterus. He also used for each a special kind of substance to be injected: wine with honey for the external genitals, goose grease for the vagina, and oil with honey for the uterus. Dr. Koromilas believed that Hippocrates was the first to make intra-uterine injections.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 15, 1894.

	Cases.	Deaths.
Tuberculosis	98	108
Typhoid fever	26	13
Scarlet fever	17	2
Cerebro-spinal meningitis	0	4
Measles	14	3
Diphtheria	106	30
Small-pox	9	2

Unfortunate Fingers.—Dr. George Corrie, of Blossom Hill, Va., gives the following history, in the *Virginia Medical Monthly*, of a family of finger-losers: "George Williams, negro, had two fingers 'hurt by the cars,' necessitating amputation (by some other doctor than myself). His father is minus an index, I having amputated it after contact thereof with the proverbial 'buzz saw.' I have amputated the right *digitus auricularis* of one of George's nephews, the hand having been caught in an apple-grinder. I relieved another of George's nephews of his left *digitus auricularis*, the boy having fallen while carrying a sharp axe, the edge of which severed all tissues, artery, and nerve, and entered the first joint. All [illegible] time in the same house."

Taking His Telephone to Bed.—A Pittsburgh physician has devised a way of taking his telephone to bed, so that he can answer calls without rising. He has his telephone hung upon hooks in his office, the connections being made by the telephone coming in contact with an electric board which he has had constructed. He also has wires run to his bedroom, where another electric board has been placed. The doctor may be said to take his telephone to bed with him every night. He takes it from the hooks in his office, carries it under his arm up to his bedroom, and places it upon the hooks there. Should any calls come during the night, he can answer them without leaving his room, thereby getting the use of two telephones for the price of one.

Mor[illegible]m in Medical Men.—It is a fact—striking though [illegible]—that more cases of morphinism are met with among medical men than in all other professions combined. It is too true that a very large proportion of cases in general are found in our own fraternity. In a paper, "Opium Addiction among Medical Men," presented in the MEDICAL RECORD eleven years ago—June 9, 1883—reference was made to the dismissal within a week of a half-dozen doctors recovered from this disease, and attention called to the surprising frequency with which it occurs in this particular class. Another decade of professional work exclusively given to the betterment of such patients has brought no decrease in this number; indeed the reverse has quite steadily obtained, so that in a paper, "The Ethics of Opium Habitués," *Medical and Surgical Reporter*, September 8, 1888, in a *résumé* of 300 cases, we noted 118 doctors, and of 125 most recently under my care 62 were medical men; and the latest reference to my record shows a still larger proportion, being more than seventy per cent.—DR. J. B. MATTISON in the *Journal of the American Medical Association*, August 4, 1894.

Migraine in Infancy.—Intelligent observation and accumulating experience show that infancy does not escape many of the neuroses (perhaps we may learn to say none of the neuroses) observed in mature life. The diagnosis is obviously embarrassed by the difficulties attendant upon the elicitation of symptoms. Thus, it has been conclusively demonstrated that infants and young children may be unequivocally hysterical, and there is reason to believe that they may be similarly affected with migraine. Evidence in support of the latter proposition is furnished by the report by Dr. Betz of the case of a female infant, thirteen months old, that, at a time when influenza was prevalent, was seized with an attack of febrile gastro-intestinal catarrh, attended with diarrhœa. In the course of this illness the infant was seized with twitching, affecting principally the hands and arms, occurring intermittently and also during sleep. It further indicated by gesture its complaint of pain in the head. Consciousness was perverted, but not lost. It was observed that the child manifested a tendency to grasp the left side of its head and to lie upon its left side, and on examination the left side of the head was found to be somewhat smaller in size than the right, while further investigation disclosed the fact that an elder sister and

Diseases of the Heart in Typhoid, Scarlatina, Diphtheria.—Dr. Rhomberg points out that the parenchymatous and interstitial processes are not closely connected in the tissues of the heart. In typhoid the higher grade of parenchymatous degeneration advances rapidly to the end of the second week; but later this morbid change is not so great. Interstitial myocarditis, on the other hand, only makes its appearance at the end of the second week, when the parenchymatous has run its course. In scarlet fever the interstitial myocarditis may begin to make its appearance on the fourth day, but its intensity is not reached till the end of the second week. Diphtheritic myocarditis makes its appearance later than scarlet fever, usually about the seventh or ninth day, and its intensity is reached about the beginning of the third week, and is continued even into convalescence. Rhomberg has seen myocarditic bands from diphtheria in the third week. Leyden has recorded several in the fourth week well advanced. In typhoid, Rhomberg has met with these in the third week. The symptoms during the fever period are—great weakness of heart, irregularity and smallness of the pulse, probably with dilatation. The best sign of dilatation of the left ventricle with irregular contractions is, according to Leyden, galopp-rhythmus. Traube considered sudden sinking of the pulse "frequenz" an ominous sign in diphtheria. Leibermeister considered the pathological increase of tissue fluid, as œdema of the ankles, a dangerous symptom. Dilatation is frequently met with in typhus by the middle of the second week; observable by the soft and empty pulse. In diphtheria Rhomberg can only relate one case of dilatation occurring in the first week. On the other hand, he has found it after a few days in scarlet fever continuing two or four weeks.—*Medical Press.*

Intestinal Toxins.—Two cases were related at the Clinical Society recently, one by Dr. Lauder Brunton and Mr. Watson Cheyne, the other by Mr. Silcock, which illustrates well the important *rôle* played by the toxins developed by decomposition of the intestinal contents in some cases of intestinal obstruction. The first was one in which, after repeated attacks of appendicitis, a somewhat gradual obstruction developed without tenderness or local signs of recent inflammation. On laparotomy being performed it was discovered that the cæcum was matted and tied down by general adhesions, but not strangulated by a band. After separating the adhesions it became possible to squeeze the contents of the small intestines into the colon, showing that the constriction was removed. Before the operation the patient had been in a state of the most absolute collapse; after it he improved somewhat for a time, but soon again relapsed, and seemed as bad as ever, until, after discharging a couple of very offensive motions, his condition rapidly improved, and he recovered without any further trouble. Mr. Silcock's case was apparently one of acute obstruction from, or at any rate accompanied by, peritonitis. Laparotomy was done, but from the matting of the intestines it was impossible to discover the exact cause, or in fact the position, of the obstruction. Ultimately however, the distended small intestine was attached to the abdominal wall, and a large amount of offensive fæcal matter was drained away. In this case, also, the collapse was profound, so that during the operation he was thought to be dead; but after the discharge of the offensive intestinal accumulation rapid recovery took place, the natural action of the bowels was restored, and the wound healed, although apparently the only thing the operation did was to empty the bowels of their contents. These cases put in striking light the fact, which is perhaps not so constantly borne in mind as it might be, that the fatal results of intestinal obstruction are not entirely due to the local mischief at the seat of the block, the strangulation, the volvulus, or the intussusception, but depend largely upon the absorption by the intestines above it of the toxins produced by the decomposition of their contents. These symptoms of sapræmic intoxication are no doubt often absent, but where they exist, where with low temperature there is thready pulse and general failure, the emptying of the bowel may clearly be as important a means of saving life as the relief of the strangulation.—*The British Medical Journal.*

Prostitution in Berlin is increasing very rapidly. According to a recent report of a committee of the Berlin Medical Society, the members of the demi monde were estimated to number from 40,000 to 50,000. In 1886 the number of professional prostitutes, those recognized as such by the police, was 3,006, and this had increased in 1891 to 4,364.

Death of an Aged Priest.—A Greek priest died recently in Trikhala, Thessaly, at the reputed age of one hundred and twenty years. He had had charge of the

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DIPTHERIA AND PSEUDO-DIPHTHERIA.

A REPORT TO HERMANN M. BIGGS, M.D., PATHOLOGIST AND DIRECTOR OF THE BACTERIOLOGICAL LABORATORY, ON THE BACTERIOLOGICAL EXAMINATION OF 5,611 CASES OF SUSPECTED DIPHTHERIA, WITH THE RESULTS OF OTHER INVESTIGATIONS ON THE DIPHTHERIA AND THE PSEUDO DIPHTHERIA BACILLUS. FROM THE BACTERIOLOGICAL LABORATORY OF THE HEALTH DEPARTMENT OF NEW YORK CITY.

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FROM May 4, 1893, to May 4, 1894, there were 5,611 cases of suspected diphtheria subjected to bacteriological examination. In 3,255 of these the Loeffler bacilli (the bacilli of true diphtheria) were found to be present, and these cases were thus proven to be true diphtheria. In 1,540 no diphtheria bacilli were present in the cultures, and as these had been carefully made at an early period of the disease, the cases from which they were taken may be considered as proven not to have been true diphtheria. In 816 cases, although no diphtheria bacilli were found in the cultures, yet, for various reasons (either because they were made after the fourth day of the disease, or the exudate was imperfectly obtained from the throat, or the culture media had become contaminated or were too dry), the cases from which the cultures were obtained were considered to be of a doubtful nature, so far as the bacteriological examination was concerned, although they were probably not diphtheria.

Thus we find in 5,611 cases of suspected diphtheria that about fifty-eight per cent. were proven to be true diphtheria, twenty seven per cent. to be false or pseudo-diphtheria, and fifteen per cent. to be of somewhat doubtful character. It would probably be just to consider that sixty per cent. were true and forty per cent. were false diphtheria.

Sex, Age, and Mortality in the Cases of True Diphtheria.—In a large percentage of the cases the sex was given, and in these there were fifty-four per cent. females and forty-six per cent. males, a fairly even division. The statistics reveal some interesting facts as to the influence of age on the occurrence of true diphtheria, as well as on the mortality of the disease. The ages of persons attacked ranged between three weeks and seventy years. The ages and mortality were determined in 1,625 cases and were as follows:

Age.	No Cases	Mortality. Per cent.	Age	No. Cases.	No. Cases per Year. Average.	Mortality. Per Cent
1st 12 mos.	24		7th to 10th year	292	97+	15
2d "	109	45	10th to 15th year.	117	23+	5
3d "	233		15th to 20th year.	20	4	
4th "	258		20th to 30th year.	41	4+	20
5th "	192		30th to 50th year.	13	1⅔	
6th "	163	33	.....	.....	.....	..
7th "	163		.....	.....	.....	..
Total mortality in all cases						27

The number of cases increased with each twelve months of life up to the fourth year and then gradually diminished. The mortality was highest in the first two years of life, and then steadily diminished until adult life was reached, when it again slowly increased.

Scarlet fever was associated with diphtheria in about five of every thousand cases. Exact figures cannot be given.

Age and Mortality in False or Pseudo-diphtheria.—It has been the general rule of the Department to take no further cognizance of cases of false diphtheria after the culture has demonstrated the absence of the diphtheria bacilli.

In order, however, to compare the mortality and the communicability of false diphtheria with that of true diphtheria, 450 cases of the false were carefully investigated by sanitary inspectors detailed for this work. These cases comprised 300 occurring in the fall months and 150 occurring in the following spring. The cases were taken in consecutive order and are believed to be average cases.

Age.	No. Cases.	No. Deaths.	Mortality. Per cent.	Age.	No. Cases.	Average per Year.	No. Deaths.	Mortality. Per cent.
1st 12 mos.	2	0	7	7th to 10th year.	63	21	..	0
2d "	17	5[1]		10th to 15th year.	63	12+	..	0
3d "	47	0		15th to 20th year.	44	9—	..	0
4th "	36	2[2]	..	20th to 30th year.	63	6+	1	2[3]
5th "	30	2[2]		30th to 50th year.	17	1—	..	
6th "	34	0	2	Over 50 years.	2	..	1	
7th "	32	0		.....	..	..	..	..

[1] Two deaths due to scarlet fever. [2] One death due to scarlet fever. [3] One death due to scarlet fever.

In the 450 cases investigated there were 11 deaths, or about two and one-half per cent. mortality. Of the 450 cases 42 were complicated by scarlet fever, and of these 42 4 died. In six of the 450 cases measles occurred as a complication, and these all recovered. Of the two deaths which occurred among the adults, one was of a man of seventy years who was suffering from a serious valvular lesion of the heart, and the other was of a young adult female* who died of septicæmia.

The five deaths occurring in uncomplicated pseudo-diphtheria in children under five years of age were all in cases in which the larynx was affected, and in three, more or less broncho-pneumonia developed as a complication.

True and Pseudo-diphtheria of the Larynx (*Membranous Croup*).—The statistics gathered of the location of the disease in the true and false cases are of special interest. There were 286 of the cases examined in which the disease was entirely or chiefly confined to the larynx or bronchi, and of these, 283 were in children and 3 in adults. In the cultures of 229 of the 286, characteristic Loeffler bacilli were found, and the cases were thus proven to be true diphtheria. Of the 229 cases in which the Loeffler bacilli were found, 167 showed no pseudo-membrane or exudate above the larynx, while in the remaining 62, although the larynx

*The history in brief of the second case was as follows: Three weeks before death the disease began with a swelling of one tonsil and its surrounding tissues. A week later, the tonsil was incised but no pus obtained, and about the incision a dirty brown pseudo-membrane formed. Later, the tonsil and surrounding tissue became necrotic and sloughed off, then the ulceration extended to the pharynx and the other tonsil, and was still progressing when the patient died of sepsis and exhaustion.

was mainly involved, there was also some membrane or exudate present on the tonsils or in the pharynx. In 57 out of the 286 examined, no diphtheria bacilli were found, but in 17 of these the cultures were unsatisfactory. Excluding the 17 doubtful cases, there were 40 cases of pseudo-diphtheria in which the diphtheria bacilli were certainly absent. The disease was confined to the larynx or bronchi in 27 of the 40, while more or less exudate or membrane was present on the tonsils or in the pharynx in 13.

TABLE OF RESULTS OF EXAMINATIONS OF CASES OF "MEMBRANOUS CROUP."

	Diphtheria Bacilli found.	Diphtheria Bacilli not found.
Cases in which the exudate was confined to the larynx or bronchi	167	27
Cases in which the exudate was chiefly confined to the larynx or bronchi, but other parts somewhat involved	62	13
Cases in which satisfactory cultures were not obtained	17	
Total cases examined	286	
Diphtheria	229	
Pseudo-diphtheria	40	
Doubtful	17	

We find, therefore, that of the cases of acute laryngitis in children which have been subjected to bacteriological examination in the laboratory of the Health Department during the past twelve months, about eighty per cent. have proved to be undoubtedly cases of diphtheria, and of the remaining twenty per cent. only fourteen per cent. were certainly not diphtheritic.

Not only have the bacteriological examinations shown that a large proportion of the cases of acute croupous laryngitis in children (commonly designated by the name membranous croup) are diphtheria, but the Department inspectors have frequently found that these cases were apparently the cause of characteristic pharyngeal diphtheria in others.

The comparatively small number of laryngeal cases examined is partially due to the fact that membranous croup has not been considered a contagious disease, and reports of such cases have not been required by the Health Department;* and partially to the custom of Department Inspectors to not make cultures in cases which have been intubated, or which seem so sick that the family may think injury had been done by inserting the swab in the throat. The cases in which no cultures are made are treated as cases of true diphtheria.

The Relation Between the Length of the Bacillus and Its Virulence.—Some investigators have believed the degree of virulence possessed by the diphtheria bacilli could, to a certain extent, be judged by their length. The longest bacilli were supposed to be the most virulent; those of medium length less so, and the shortest little, if at all, virulent. By observing this characteristic it was thought cultures might become helpful in prognosis. Very careful notes have been made on this point in the examination of the bacteria from the original serum tubes in 1,613 cases.

The results of the examinations are shown in the following table:

	Cases.	Mortality Per Cent.
Bacilli of average size found in	1,368	26
" longer than average found in	82	27
" shorter " " "	67	35
" short, not characteristic in shape and evenly stained, of which many were pseudo-diphtheria bacilli	66	12
Total cases examined	1,613	

The results obtained from this examination of 1,613 cultures therefore indicate that in New York the great majority of cases of diphtheria yield in cultures bacilli of medium size, which are characteristic in shape and manner of staining. In a moderate number of cases the bacilli found are much longer, and in about an equal number they are much shorter. Both the clinical histories and the animal experiments show that whenever in their shape and in the way in which they take the staining fluid the bacilli are characteristic, no information as to their virulence, either in men or animals, can be gathered from their length. Those bacilli, on the other hand, which are short and stain uniformly with methyl-blue, usually prove to be of the pseudo diphtheria type, and have no virulence in animals.

The Bacteriology of Diphtheria.—So many inquiries have been sent to the Department regarding the methods employed for the general bacteriological examinations of suspected cases of diphtheria, that it has been thought desirable to include in this report a condensed account of the facts which have been brought out in the various bacteriological investigations of diphtheria, together with a description of the characteristics of the diphtheria bacilli which must be known in order to make bacteriological examinations for diagnostic purposes.

It is hoped that with these additions this report may be of greater practical assistance to many who have begun or are about to begin similar work.

Successive Investigations Showing the Specific Causal Relation of the Diphtheria Bacillus of Klebs and Loeffler to Diphtheria.—In the year 1883, bacilli, which were very peculiar and striking in appearance, were shown by Klebs[1] to be of constant occurrence in the pseudo membranes from the throats of those dying of true epidemic diphtheria. One year later Loeffler[2] published the results of a very thorough and extensive series of investigations on this subject. He found the bacillus described by Klebs in most, but not in all, cases of throat inflammations which had been diagnosticated as diphtheria He separated these bacilli from the other bacteria present and obtained them in pure culture. When he inoculated these bacilli upon the abraded mucous membrane of susceptible animals, pseudo-membranes were produced, and frequently death followed. If a certain amount of a bouillon culture was injected subcutaneously into guinea-pigs, death was caused with characteristic lesions. Loeffler's failure to find the bacilli in every case examined is now explained by the fact that certain varieties of pseudo-membranous inflammation not due to the diphtheria bacillus, such as occur especially in scarlet fever, were then wrongly considered to be true diphtheria.

In 1887,[3] further studies by Loeffler added to the proof of the dependence of diphtheria on the diphtheria bacilli. In 1888, D'Espine found the bacilli in fourteen cases of characteristic diphtheria, and proved them to be absent in twenty-four cases of mild sore-throats which, clinically, were believed not to be cases of diphtheria. In the same year, the first report of the results of the very important investigations of Roux[4] and Yersin was published, and the dependence of diphtheria on the diphtheria bacilli may be considered to have been established. Roux and Yersin found that diphtheria bacilli were present in all characteristic cases of diphtheria, and that these bacilli possessed the cultural and pathogenic qualities of those described by Loeffler. They found, too, when the bacilli were inoculated upon the healthy mucous membrane of the trachea of the rabbit, no result

* An Amendment to the Sanitary Code was adopted by the Board of Health on June 6, 1894, by virtue of which membranous croup is regarded as laryngeal diphtheria, and hereafter physicians will be required to report such cases to the Health Department.

NOTE.—Many experienced physicians still find difficulty in believing that cases in which the exudate or pseudo-membrane is entirely absent from the pharynx and tonsils are those of true diphtheria It is also often difficult to persuade parents that such cases are diphtheria, as, for instance, a child, age 1 five, subject to attacks of bronchitis and slight laryngitis, developed a croupy cough. For diagnostic purposes a culture was made and the diphtheria bacilli were found to be present. It was with the greatest difficulty that the parents could be made to consider the case a serious one and to quarantine the child. Under suitable treatment, on the fifth day the child seemed nearly recovered, and now the parents became sure it was not a case of diphtheria, stopped all precautions, allowed the child to go out, etc. A relapse followed, the laryngeal symptoms increased, and the child died in thirty-eight hours, of asphyxia, intubation being refused.

followed; but if the inoculation was made on the abraded membrane, phenomena occurred which strikingly resembled those present in membranous laryngitis in man, *i.e.*, congestion of the mucous membrane followed by the formation of a pseudo membrane, œdematous swelling of the tissues, and of the glands of the neck, dyspnœa, stridulous breathing, and asphyxia. Injections of cultures beneath the skin of rabbits and guinea pigs in sufficient quantity caused their death in from thirty six hours to five days, the period varying in ratio to the susceptibility of the animal, and the number and the virulence of the bacteria introduced. The same results followed the injections of filtered cultures, showing the products formed by the growth of the bacilli were by themselves capable of causing the general lesions.

Roux and Yersin were also able to produce in animals characteristic diphtheritic paralysis. They produced this in many cases where the inoculated animals did not succumb to a too rapid intoxication. Paralysis commenced in a pigeon three weeks after the inoculation of the pharynx, and after all membrane had disappeared and the animal seemed to have completely recovered. In rabbits, the paralysis usually commenced in the posterior extremities, and then gradually extended to the whole body, causing death by paralysis of the heart or respiration. In rare instances the muscles of the neck or of the larynx were first paralyzed, and thus characteristic symptoms were caused. The authors conclude: "The occurrence of these paralyses, following the introduction of the bacilli of Klebs and Loeffler, completes the resemblance of the experimental disease to the natural malady, and establishes with certainty the specific *rôle* of this bacillus."

Finally, the microscopical changes in the internal organs of animals dying of experimental diphtheria produced by the bacilli have been shown by Welch and Flexner,[8] and by Babes [9] and others, to be essentially the same as those produced by diphtheria in man, and thus a still further proof is afforded of the specific *rôle* of this bacillus.

The results of the various observations detailed above have since been confirmed by a great number of combined clinical and bacteriological investigations, so that all who have studied the bacteriology of diphtheria would now agree with the following statement made by Welch [7] in an address on diphtheria: "All the conditions have been fulfilled for diphtheria which are necessary to the most rigid proof of the dependence of an infective disease upon a given micro-organism, viz., the constant presence of this organism in the lesions of the disease, the isolation of the organism in pure culture, the reproduction of the disease by inoculations of pure cultures, and similar distribution of the organism in the experimental and in the natural disease. In view of these facts, we must agree with Prudden,[6] that we are now justified in saying that the name diphtheria, or at least, primary diphtheria, should be applied, and exclusively applied, to that acute infectious disease usually associated with a pseudo-membranous affection of the mucous membrane, which is primarily caused by the bacillus called the bacillus diphtheriæ of Loeffler."

Pseudo or False Diphtheria.—Under this general title are included all cases of pseudo membranous or exudative inflammation of the mucous membranes in which the diphtheria bacillus is absent. The thorough consideration of the bacteriology of this form of inflammation is to be reserved for a later report, but it is necessary to touch on a few points here.

Since Loeffler [2] in 1889 first described a class of pseudo-membranous inflammations of the throat in which the diphtheria bacilli were absent and cocci present, it has been established that a certain proportion of the inflammations of the respiratory mucous membranes, which closely resemble the less characteristic cases of diphtheria, are not due to the diphtheria bacilli but to cocci, especially to streptococci.

It has been found that streptococci are commonly present in the throats of healthy persons, or at least in the throats of persons living in large cities, and that other forms of cocci, especially the pneumococci and staphylococci, are apt to be associated with them. These germs seem to live in the throat without creating any disturbance there so long as the mucous membranes are healthy, but under certain conditions, as when the mucous membrane has been made vulnerable by exposure to cold or other deleterious influences, or by the poison of scarlet fever, measles, or some other disease, the streptococci, alone or associated with other cocci, are able to attack the mucous membrane and to cause an inflammation. This may be of any degree of intensity from a simple inflammatory hyperæmia to an inflammation with the extensive production of pseudo membrane or with ulceration. Such inflammations, when associated with the formation of a pseudo-membrane, are known as pseudo-diphtheria. The exudate, or pseudo membrane, in pseudo-diphtheria is usually confined to the tonsils, but other parts, such as the larynx, pharnyx, and nostrils, may be invaded.

It has been found that the percentage of mortality in these cases is far less than in diphtheria, and that the disease is seldom, if ever, communicated to others.

The Proportion of Cases of Suspected Diphtheria which upon Examination Prove to be True Diphtheria.—As soon as careful investigation had demonstrated it was possible, with proper precautions, to separate by bacteriological examination the cases of true from the cases of false diphtheria, large numbers of cases suspected to be diphtheria were examined bacteriologically. The reports from hospitals in which all cases of diphtheria and of suspected diphtheria were examined, are of especial interest as showing the proportion of cases of true to false diphtheria. The results from these hospitals are all the more valuable because the cases came from all parts of the various cities in which the respective hospitals were located, and hence special local conditions were not likely to greatly influence the general results obtained. Thus Baginsky,[9] in Berlin, found the diphtheria bacilli in 120 out of 154 suspected cases; Martin,[10] in Paris, in 126 out of 200; Park,[11] in New York, in 127 out of 244; Janson,[12] in Switzerland, in 63 out of 100; and Morse,[13] in Boston, in 239 out of 400. Thus from twenty to fifty per cent. of the cases sent to diphtheria hospitals did not have diphtheria.

If we examine the reports of examinations made under some special conditions, as during an outbreak of some contagious disease in a hospital for children we find the results may differ in a striking manner.

Thus in 1889 Prudden [14] made bacteriological examinations of 24 fatal cases of pseudo-membranous inflammation of the tonsils, pharynx, and larynx. In none of these were the Loeffler bacilli found to be present. These cases occurred in two hospitals for children in New York, in which both scarlet fever and measles were at the time prevalent. During the past year we have examined the exudate from 46 fatal cases of suspected diphtheria occurring in the same institutions and found the bacilli present in 44 of them.

If scarlet fever and measles (but not true diphtheria) were prevailing in an institution, it is evident the bacilli would be absent from the pseudo membranes occasionally occurring in the throat as a complication of these diseases.

The Mortality in True Diphtheria and in Pseudo-Diphtheria.—All observers have found the mortality was far higher in those cases in which the diphtheria bacilli were present than in those in which they were absent. In true diphtheria the mortality has been found to vary from 25 per cent. to 70 per cent., while in pseudo diphtheria it varies from 0 per cent. to 20 per cent.

The death-rate in cases of pseudo-diphtheria occurring in hospitals averages far higher than the death rate outside of such institutions. The reason for this is chiefly to be found in the fact that it is mainly the graver cases, especially those suffering from laryngeal obstruction, which are removed to the hospitals.

Laboratory Technique. *Collection of the Blood-serum and its Preparation for Use in Cultures.*—A covered glass jar, which has been thoroughly cleansed with hot water, is taken to the slaughter house and filled with freshly shed blood from a calf or sheep. The blood is received directly in the jar as it spurts from the cut in the throat of the animal. After wiping the edge of the jar, it is covered with the lid and set aside where it may stand quietly until the blood has thoroughly clotted. The jar is then carried to the laboratory and placed in an-ice chest. If the jar containing the blood is carried about before the latter has clotted, very imperfect separation of the serum will take place. It is well to inspect the blood in the jar after it has been standing a few hours, and if the clot is found adhering to the sides, to separate it by a rod. The blood is allowed to remain twenty-four hours on the ice, and then the serum which surrounds the clot is siphoned off by a rubber tube and mixed with one-third its quantity of nutrient beef-broth, to which one per cent. glucose has been added. This constitutes the Loeffler blood-serum mixture. The broth used to mix with the serum is prepared as follows: One pound of finely chopped lean beef is allowed to soak in one litre of water in a cool place for at least twelve hours. The meat and fluid are now dumped into a cheese cloth or towel, and the fluid squeezed out. To this solution one per cent. of peptone, one per cent. of glucose, and one-half per cent. of common salt are added. It is well to test the reaction of the mixture, and if it is found to be acid, to render it neutral by adding a few drops of a solution of caustic soda or carbonate of soda. The whole is now boiled for half an hour, and filtered through absorbent cotton or filter-paper. If the broth is to be kept it should be placed in flasks and then sterilized. The Loeffler blood-serum mixture when ready is poured into tubes, which should be about four inches in length and two thirds of an inch in diameter. These tubes should first be plugged with cotton, and sterilized by dry heat at 150° C. for one hour. Care should be taken in filling the tubes to avoid the formation of air-bubbles, as they leave a permanently uneven surface when the serum has been coagulated by heat. To prevent this, the end of the pipette or funnel which contains the serum should be inserted well into the test-tube. About 2 c.c. are sufficient for each tube. The tubes having been filled, are now to be coagulated and sterilized. The tubes are placed at the proper angle and then kept for two hours at a temperature just below the boiling point. For this purpose a Koch serum-coagulator or a double boiler serves best, though a steam sterilizer will suffice. If the latter is used, a wire frame must be arranged to hold the tubes at the proper inclination, and the degree of heat must be carefully watched, as otherwise the temperature may go too high, the serum actually boiled, and the culture medium thus spoiled. After sterilization by this process the tubes containing the sterile, solidified blood-serum can be placed in covered tin-boxes and kept for months. The serum thus prepared is quite opaque and firm. A mixture of blood-cells renders the serum darker, but it is not less useful.

The Swab for Inoculating Culture-tubes.—The swab to inoculate the serum is made as follows: A stiff, thin steel rod, six inches in length, is roughened at one end by a few blows of a hammer, and about this end a little absorbent cotton is firmly wound. Each swab is then placed in a separate glass tube, and the mouths of the tubes are plugged with cotton. The tubes and rods are then sterilized by dry heat at about 150° C. for one hour, and stored for future use. These cotton swabs have proved much more serviceable for making inoculations than platinum-wire needles, especially in young children and in laryngeal cases. It is easier to use the cotton swab in such cases, and it gathers up so much more material for the inoculation that it has seemed more reliable.

For convenience and safety in transportation "a culture outfit" has been devised which consists of a small wooden box containing a tube of blood serum, a tube holding a swab, and a record blank. These "culture outfits" may be carried or sent by messenger or express to any place desired, and are kept at stations scattered throughout the city for the free use of physicians.

Directions for Inoculating Culture-tubes with the Exudate in Cases of Suspected Diphtheria.—The patient should be placed in a good light, and, if a child, properly held. The swab is removed from its tube, and while the tongue is depressed with a spoon it is passed into the pharynx (if possible without touching the tongue) and is rubbed gently but firmly against any visible membrane on the tonsils or in the pharynx, and then, without laying the swab down, it is immediately inserted in the blood serum tube, and the portion which has been previously in contact with the exudate is rubbed a number of times back and forth over the whole surface of the serum. This should be thoroughly done, but it is to be gently done, so as not to break the surface of the serum. The swab is replaced in its tube and both tubes, their cotton plugs having been inserted, are returned to the box and sent to the collecting station. The blank forms of report which accompany each outfit should be completely filled out and forwarded to the station with the tubes.

Where there is no visible membrane (it may be present in the nose or larynx) the swab should be thoroughly rubbed over the mucous membrane of the pharynx and tonsils, and in nasal cases, when possible, a culture should also be made from the nose. In little children care should be taken not to use the swab when the throat contains food or vomited matter, as then the bacterial examination is rendered more difficult. Under no conditions should any attempt be made to collect the material shortly after the application of disinfectants (especially solutions of corrosive sublimate) to the throat. If any of these instructions have not been carried out, the fact should be carefully noted on the record blanks.

The Examination of Cultures.—The culture tubes which have been inoculated as described above, are kept in an incubator at 37° C. for twelve hours, and are then ready for examination. On inspection it will be seen the surface of the blood-serum is dotted with very numerous colonies, which are just visible. At this time no diagnosis can be made from simple inspection. (If, however, the serum is found liquefied, or shows other evidences of contamination, the examination will probably be unsatisfactory.) A microscopical preparation is now made by placing a tiny drop of water upon a clean cover-glass, and then a platinum needle is inserted in the tube, and quite a large number of colonies are swept with it from the surface of the culture medium. The bacteria adherent to the needle are washed off in the drop of water previously placed on the cover glass and smeared over its surface. The bacteria on the glass are then allowed to dry in the air. The cover-glass is then passed quickly through the flame of a Bunsen burner or alcohol lamp three times in the usual way, covered with a few drops of Loeffler's solution of alkaline methyl-blue, and left without heating for ten minutes. It is then rinsed off in clean water, dried, and mounted in balsam.

In the great majority of cases one of two pictures will be seen with the $\frac{1}{12}$ oil immersion lens; either an enormous number of characteristic Loeffler bacilli with a moderate number of cocci, or a pure culture of cocci mostly in pairs or short chains (see photographs). In a few cases there will be an approximately even mixture of Loeffler bacilli and cocci, and in others a great excess of cocci. Besides these, there will be occasionally met preparations in which, with the cocci, there are mingled bacilli more or less resembling the Loeffler bacilli, but not characteristic. These bacilli, which may be either the less characteristic diphtheria bacilli or the pseudo-diphtheria bacilli (see photographs), are especially frequent in cultures from the nose.

In not more than one case in twenty will there be any serious difficulty in making the diagnosis, if the serum-

tube has been properly inoculated. In such a case another culture may clear up the doubt, or it may be necessary to obtain the bacilli in pure culture.

The Direct Microscopical Examination of the Exudate.—An immediate diagnosis, without the use of cultures, is often possible from a microscopical examination of the exudate. This is made by smearing a cover glass with a little exudate from the swab, drying, staining, and examining it microscopically. This examination, however, is much more difficult and the results more uncertain than when the covers are prepared from cultures. The bacilli from the membrane are usually less typical in appearance than those found in cultures, and they are mixed with fibrin, pus, and epithelial cells. They may also be very few in number in the parts reached by the swab, or bacilli may be met which closely resemble the Loeffler bacilli in appearance, but which differ greatly in growth and in other characteristics. When in a smear containing mostly cocci a few of these doubtful bacilli are present, it is impossible either to certainly exclude or make the diagnosis of diphtheria. Although in certain cases this immediate examination may be of the greatest value, it is not a method suitable for general use.

Characteristics of the Diphtheria Bacillus.—When cover-glass preparations made from the blood-serum tubes are examined, the diphtheria bacilli are found to possess the following characteristics:

The diameter of the bacilli varies from 0.3 to 0.8 m., and the length from 1.5 to 6 m. They occur singly and in pairs, and very infrequently in chains of three or four. The rods are straight or slightly curved, and usually are not uniformly cylindrical throughout their entire length, but are swollen at the ends, or pointed at the ends and swollen in the middle portion. Even from the same culture different bacilli differ greatly in their size and shape. The two bacilli of a pair may lie with their long diameter in the same axis, or at an obtuse or an acute angle. The bacilli possess no spores, but have in them highly refractile bodies. They stain readily with the ordinary aniline dyes, and retain their color after staining by Gram's method. With an alkaline solution of methyl-blue, the bacilli, from blood-serum cultures especially, and from other media less constantly, stain in an irregular and extremely characteristic way. The bacilli do not stain uniformly. Certain oval bodies, situated in the ends or in the central portion, stain much more intensely than the rest of the bacillus. Sometimes these highly stained bodies are thicker than the rest of the bacillus; again they are thinner and surrounded by a more slightly stained portion. The bacilli seem to stain in this peculiar way at a certain period in their growth, so that only a portion of the organisms taken from a culture at any one time will show the characteristic staining. In old cultures it is often difficult to stain the bacilli, and the staining, when it does occur, is frequently not at all characteristic.

Growth on Blood-serum.—If we examine the growth of the diphtheria bacillus in pure culture on blood serum we will find at the end of ten to twelve hours little colonies of bacilli, which appear as pearl gray or whitish gray slightly raised points. The colonies when separated from each other may increase in forty-eight hours so that the diameters may be a quarter of an inch. The borders are usually somewhat uneven. Those colonies lying together fuse into one mass, especially if the serum is rather moist. During the first twelve hours, the colonies of the diphtheria bacilli about equal in size those of the streptococci; but after this time the diphtheria colonies become larger than those of the streptococci, nearly equalling those of the staphylococci. The diphtheria bacilli in their growth never liquefy the blood serum.

Growth on One Per Cent. Alkaline Glycerine-agar, and Method of Obtaining Pure Cultures.—It is frequently desired to obtain the diptheria bacillus in pure culture. This is most readily accomplished by removing with a platinum needle a portion of the mixed growth of bacteria in a serum tube and lightly streaking it over the surface of the nutrient agar* contained in a Petri dish.

Though the growth of the diphtheria bacilli upon agar is less certain and luxuriant than upon serum, the appearance of the colonies when examined under the microscope is more characteristic.

If the diphtheria colonies develop deep in the substance of the agar, they are usually round or oval, and, as a rule, present no extensions, but if near the surface, commonly from one, but sometimes from both sides, they spread out an apron-like extension which exceeds in surface area the rest of the colony. When the colonies develop entirely on the surface, they are more or less coarsely granular, are nearly translucent, and usually have a darker centre. The edges are sometimes jagged, and frequently shade off into a delicate lace-like fringe; at other times the margins are more even and the colonies are nearly circular. With a high power lens the edges show sprouting bacilli (see photographs). The colonies are grayish or grayish white by reflected light, and pure gray or with olive tint by transmitted light.

The growth of the diphtheria bacillus upon agar presents certain peculiarities which are of the utmost practical importance. While the bacilli from the majority of cases grow rather feebly, some grow luxuriantly. If a large number of the bacilli from a recent culture are implanted upon a properly prepared agar plate, a certain and fairly vigorous growth will always take place. If, however, the agar is inoculated with the exudate of a throat which contains but few Loeffler bacilli, no growth whatever of the bacilli may occur; while the tubes of coagulated blood-serum inoculated with the same exudate contain them abundantly. Again, agar prepared from broth made from different specimens of beef, or to which different peptones have been added, varies somewhat as to its suitability for the growth of the bacilli. Because of the uncertainty of obtaining a growth by the inoculation of agar with a few bacilli, or with bacilli of diminished vigor, agar is a far less reliable medium than blood serum for use in cultures made for diagnostic purposes, and is therefore not to be recommended. All agar should be tested by means of a pure culture of the diphtheria bacillus before being used experimentally.

Growth in Broth.—All the varieties of the Loeffler bacillus experimented with have grown in slightly alkaline broth with or without the addition of one per cent. glucose. The characteristic growth is one showing fine grains. These deposit along the sides and bottom of the tube, leaving the broth nearly clear. In some cultures for twenty-four to forty-eight hours there is a more or less diffuse cloudiness, and exceptionally a film forms over the surface of the broth. On shaking the tube this film breaks up and slowly sinks to the bottom. All the varieties tested caused the alkaline broth to become acid, or, at least, distinctly less alkaline, within forty-eight hours.

Animal Inoculations as a Test of Virulence.—Animal experiments form the only reliable method of determining with certainty the virulence of the diphtheria bacillus. For this purpose alkaline glucose-broth cultures of forty-eight hours' growth should be used for the subcutaneous inoculation of guinea pigs. The amount injected may vary from one-fourth to one-half per cent. of the body-weight of the animal inoculated. In the great majority of cases, when the bacilli are virulent, this amount causes death within seventy-two hours. In the autopsy the characteristic lesions described by Loeffler are found; namely, at the seat of inoculation there is a grayish focus surrounded by an area of congestion; the subcutaneous

* The agar is prepared by adding one per cent. of agar to the required quantity of broth. This broth is prepared in the same way as that used in the blood-serum mixture already described, except that it contains no glucose. The agar must be thoroughly dissolved in the broth, and to accomplish this it is necessary to boil the mixture for from three to six hours. Before filtering, sufficient alkali must be added to make the agar slightly but distinctly alkaline. Finally, six per cent. of glycerine is added, and the mixture sterilized in flasks. When needed it is melted and poured into sterilized Petri dishes in a thin layer.

tissues for an extensive area around are congested, and at times very œdematous; the adjacent lymph nodes are swollen and the serous cavities—especially the pleural—frequently contain an excess of fluid, usually clear, but at times turbid; the lungs are usually congested. If the organs are subjected to microscopical examinations, the lesions described by Welch and Flexner,[5] Babes,[6] and others are found. There are numerous smaller and larger masses of necrotic cells which are permeated by leucocytes. The heart and the voluntary muscular fibres usually show degenerative changes. The number of leucocytes in the blood is increased. From the area surrounding the point of injection virulent bacilli may be obtained, but in distant areas and organs they are only ocasionally found.

Bacilli, which in cultures and in animal experiments have shown themselves to be characteristic, may be regarded as certainly true diphtheria bacilli, and as capable of producing diphtheria in man under favorable conditions.

Original Investigations.—A large portion of the daily work in the laboratory has consisted in the routine examination of the cultures received each day. Besides this, however, a number of important questions have been studied experimentally, of which the most important are the following:

1. How much reliance can be placed on the bacteriological diagnosis made from the examination of a culture inoculated with the exudations in the throat of a case of suspected diphtheria?

2. If in cultures bacilli are found which possess the shape, size, and staining characteristics of the diphtheria bacillus, can they, without further cultural or animal experiments, be considered as virulent diphtheria bacilli?

3. What is the period of time during which virulent diphtheria bacilli remain in the throat after the disappearance of the exudate or pseudo-membrane?

4. (*a*) What relation has the pseudo- and the non-virulent diphtheria bacillus to the true virulent bacillus?

(*b*) Are virulent diphtheria bacilli ever present in the throats of healthy persons who have been in contact with diphtheria?

5. To what degree is pseudo-diphtheria communicable?

6. What are the means by which diphtheria is transmitted?

1. *How much Reliance can be Placed on the Bacteriological Diagnosis made from the Examination of a Culture Inoculated with the Exudations in the Throat of a Case of Suspected Diphtheria?*—During the first few months, in order to test the results of the examinations and to make the liability to error as slight as possible, the following plan was adopted:

All cases in which the cultures yielded no diphtheria bacilli were turned over to special inspectors, who made, whenever possible, a second culture, and followed up the case during the illness, and for some time even after its recovery.

By means of the information thus obtained the bacteriologists of the Department were able more and more surely to decide how far they could base absolute diagnoses on cultures, especially when made by others. Many physicians, as well as the inspectors, gradually became so skilled in making inoculations that it was possible to rely certainly on the results obtained from the examination of their cultures; while, on the other hand, it was found that caution was necessary in accepting the inoculations of others, and in such cases a second culture was requested.

After a year's trial the following conclusions have been arrived at: The examination by a competent bacteriologist of the bacterial growth in a blood-serum tube which has been properly inoculated and kept for fourteen hours at the body temperature, can be thoroughly relied on in cases where there is visible membrane in the throat, if the culture is made during the period in which the membrane is forming, and no antiseptic, especially no mercurial solution, has lately been applied.

In cases in which the disease is confined to the larynx or bronchi, and where, therefore, there is no visible exudate against which the swab can be rubbed, surprisingly accurate results can be obtained from the examination of cultures, but in a certain proportion of cases no diphtheria bacilli will be found in the first culture, and yet will be abundantly present in later ones, the bacilli having probably been coughed up more freely as the disease progressed. We believe, therefore, that absolute reliance for a diagnosis cannot be placed on a negative result in a single culture from the pharynx in purely laryngeal cases.

In nasal diphtheria a negative result may be obtained from a culture made from the throat, and yet the bacilli be found in cultures from the nose.

In making a diagnosis from the examination of a culture it is essential to know the duration of the disease in the case from which it was made, because although bacilli may remain present and alive in some throats for many weeks, it is nevertheless important to remember they may vanish early and suddenly, and that, therefore, the cultures cannot be certainly relied on after the membrane begins to disappear.

The use of antiseptics shortly before making the inoculation of a culture tube may render the culture useless for diagnosis. It has been found in a few instances that a culture made from a case of diphtheria shortly after a thorough irrigation with a 1 to 4,000 solution of bichloride of mercury gave no diphtheria bacilli, though one made just before, and one made some time later, gave them abundantly. It is a curious fact that under such circumstances a vigorous growth of other organisms may take place.

The above conclusions are true only when the inoculations have been properly made, and in judging cultures received from physicians in general, the greatest care must be taken. Some cultures are made carelessly, and some evidently without taking the pains to even read the instructions, or to glance at the condition of the coagulated serum in the tube. If, therefore, when no diphtheria bacilli are found, the bacterial growth is scanty, the media dry or contaminated, or the inoculation in any way faulty, the case must be referred back for another culture. The second culture in these cases not infrequently contains the bacilli when the first did not.

The absence of the bacilli in a culture proves the case to be one of false diphtheria only when it has been possible to make it under the proper conditions.

2. *If in Cultures Bacilli are found which Possess the Shape, Size, and Staining Characteristics of the Diphtheria Bacillus, can they, without Further Cultural or Animal Experiments, be Considered as Virulent Diphtheria Bacilli?*—Since it is the custom in the laboratory of the Health Department to make a bacteriological diagnosis in suspected cases of diphtheria from the examination of the growth upon the original blood serum tube, without waiting for further cultural or animal experiments, it is of the greatest practical importance to ascertain to what extent bacilli appearing upon the serum in every way characteristic of the diphtheria bacilli can be assumed to be virulent.

To test the virulence of bacilli it is necessary to obtain them in pure culture, for otherwise it would be impossible to determine whether the changes produced in the inoculated animal were due to the supposed diphtheria bacilli or to other micro-organisms injected with them. It is further necessary to grow the bacilli in proper media and to inoculate susceptible animals at a period when the growth of the bacilli in the media has reached its maximum. It is only when these precautions have been followed that accurate results will be obtained. The present almost uniform practice is to inoculate half-grown guinea-pigs with from one-quarter to one-half per cent. of their body-weight of a forty-eight hours' culture of the bacilli grown at 37° C. in simple nutrient or glucose alka-

line broth. It is important to remember that it is not safe to decide because the growth derived from one bacillus is not virulent that all the bacilli from that throat are not virulent. The cultures from several bacilli must be tried. The majority of those who have inoculated bacilli derived from pseudo membranes and possessing the characteristics of the Loeffler bacilli have found, as Loeffler did, that they were always virulent. The researches of Hofmann,[15] Beck,[16] and others, however, showing that in a certain number of healthy throats there were bacilli which closely resembled the Loeffler bacillus and yet were not virulent, stimulated others to subject the bacilli from large numbers of cases of suspected diphtheria to the test of animal inoculation.

In 1890 Roux and Yersin[17] published the results of some examinations as to the virulence of the bacilli obtained from 100 cases of diphtheria. Fifty-five of these were fatal cases, and in all of them virulent bacilli were found, although in a few, together with many virulent bacilli, there were a few non-virulent ones. Among the 45 cases which recovered, many were very mild, and in 10 of them they found no bacilli of sufficient virulence to cause the death of guinea pigs, when injected in moderate amount. From all of them, however, they obtained bacilli capable of causing inflammation in the guinea-pig at the point of injection. This varied from slight, transient œdema to extensive necrosis. From further experiments they proved similar bacilli were able, under proper conditions, to regain their virulence. They further showed in these milder cases, among many non-virulent or slightly virulent bacilli, there were usually a few virulent ones; therefore they believed in most of these ten cases fully virulent bacilli may have been present in the throat with the slightly virulent ones, which by chance were used for the inoculations. In similar investigations carried on in a different locality somewhat different results were obtained. Escherich[18] was unable to obtain, from a large number of diphtheria cases studied, any bacilli having the characteristics of the Loeffler bacillus which were not virulent, and only a few which, in injections of one-quarter per cent. of the body weight of a forty-eight-hour bouillon culture, did not kill guinea-pigs within forty-eight hours. Koplik,[19] in New York, in testing the virulence of bacilli from mild cases of tonsillar diphtheria, found them in every case fully virulent.

In Baltimore Welch[20] and Abbott in eight cases of diphtheria found the bacilli in every case fully virulent. In a later investigation, in which a large number of healthy and slightly inflamed throats were examined, Abbott[21] found in the cultures from three, bacilli resembling the Klebs-Loeffler bacilli, but lacking virulence. These will be considered bacteriologically in connection with the pseudo diphtheria bacilli, but the cases are of sufficient interest to be briefly quoted in the present consideration of the virulence of bacilli obtained from throats in which inflammatory lesions have appeared which more or less resemble diphtheria.

Case I.—Adult, aged fifty-nine, while in hospital developed a laryngitis and pharyngitis. The uvula, tonsils, and faucial pillars became swollen and œdematous, of an intense crimson red color, and covered with a thin, grayish-white, slightly adherent exudate. In five days the patient completely recovered. Bacteriological examination showed abundant, apparently characteristic diphtheria bacilli, which, when inoculated, proved not to be virulent.

Case II.—Adult, similar lesions to last; well on ninth day. Bacteriological examination: Abundant bacilli, in appearance similar to Klebs-Loeffler bacillus, but not virulent.

Case III.—Girl, aged eleven; acute tonsillitis, with small white plug in one crypt. Quick recovery. Bacteriological examination: Apparently characteristic Loeffler bacilli, but not virulent.

It must remain a matter of doubt whether some colonies from these cases would have been found to possess virulence if more had been tested as to this characteristic. These cases, as well as those of Roux and Yersin, show that now and then the bacilli from cases suspected to be diphtheria have little or no virulence.

Original Investigations.—In order to determine the virulence of the bacilli obtained in the ordinary routine examinations from suspected cases of diphtheria, blood-serum cultures from twenty cases were selected in which bacilli were found having the characteristic appearance of the virulent diphtheria bacilli. The cultures tested were selected before any information was possessed of the severity of the case from which they were obtained and were used for experiments on animals.

Virulence of the Bacilli found in Twenty Cases of Throat Inflammations of such a Character as to arouse a Suspicion of the Existence of Diphtheria.

No.	Severity.	Weight of Guinea-pig. Gms.	Amount of Culture injected. C.c.	Duration of Life after Inoculation.	Persistence of Loeffler Bacillus after Recovery of Patient.
1	Very mild case. Sick only four or five days	458	2	40 hours	14–19 days.
2	Moderately severe case. Subsequently contracted scarlet fever	305	1	12 days.	
3	Mild case	350	1	45 hours.	24–32 days.
4	Mild case	900	3	40 hours.	
5	Mild case	405	1	40 hours.	6 days.
6	Very mild case. Culture taken after disappearance of membrane	430	1.5	40 hours.	13 days.
7	Very mild case	410	1.5	40 hours.	
8	Fatal case, and cause of severe case in mother	435	1.33	40 hours.	P. 16 days.
9	Mild case	390	1.33	40 hours.	P. 38–41 days.
10	Mild case. Adult; never in bed	210	0.5	50 hours.	P. 44 days.
11	Removed to Diphtheria Hospital. Severe case	220	0.5	40 hours.	
12	Rather mild case	620	3.33	25 hours.	P. 42 days.
13	Very mild case	479	2	40 hours.	P. 20–74 days.
14	Fatal case. Croup	675	1.5	40 hours.	
15	Fairly severe case, followed by measles	443	1.33	40 hours.	P. 15–23 days.
16	Moderately severe case	435	1.33	4 days.	P. 15–19 days.
17	Moderately severe case	510	1.66	40 hours.	
18	Fatal case. Croup	475	1.5	40 hours.	
19	Very mild case	500	1.66	40 hours.	
20	Contracted from a mild case. No membrane present	250	1	40 hours.	

We find, therefore, that the bacilli obtained from twenty cases of suspected diphtheria, two-thirds of which were very mild cases, proved in every case to be virulent, and in all but three fully so. If these results are considered in connection with those obtained by other American and European observers, we must conclude that for diagnostic purposes all bacilli found in throat inflammations suspected to be diphtheria, which possess the morphological and cultural characteristics of the Lœffler bacilli must be regarded as virulent unless animal inoculations prove otherwise. Further, it should be remembered (as shown by Roux and Yersin, and as confirmed by others and by ourselves) that the absence of virulence in a culture derived from one bacillus is not sufficient to prove that cultures from other bacilli from the same case would not be virulent.

In three of the above cases the cultures from the first colony selected were not virulent, while from others they were fully so.

3. *What is the Period of Time during which Virulent Diphtheria Bacilli Remain in the Throat after the Disappearance of the Exudate or Pseudo-membrane?*—If a piece of membrane be removed from a throat during the period of invasion of diphtheria and examined microscopically or by cultures, the presence of abundant diphtheria bacilli will be noted. If, a few days later, when the membrane has begun to loosen, another bit be examined the diphtheria bacilli will be found to be partly or at times wholly replaced by other micro organisms, mostly cocci. If, several days after the complete disappearance of the membrane, cultures be made from the mucus of the throat, it will be found the bacilli of diphtheria in many cases will have disappeared from the throat. This rule is not, however, without many exceptions, for it will be frequently found—days after the complete disappearance of the membrane and after the return of the

throat to a healthy condition—fully virulent bacilli linger in the throat.

If we examine the researches of others regarding this matter we find the following facts:

No.	Severity of the Diphtheria in the Case.	Length of Time during which the Bacilli had persisted after the disappearance of the Exudate when they were tested as to their Virulence.	Results obtained from the Inoculation of Guinea-pigs.
	Roux and Yersin:[17]		
1	Mild case.	3 days.	Guinea-pig died in twenty four hours.
2	Mild case.	3 days.	Fully virulent. Killed in a few hours.
3	Severe laryngeal case.	11 days.	Guinea-pig died in three days.
4	Severe case.	14 days.	Guinea-pig. Fully virulent.
5	Mild case.	9 days.	Some colonies virulent, some not virulent. For one week more, non-virulent bacilli were found.
6	Mild case.	7 days.	Virulent and non-virulent colonies. For four days more only non-virulent bacilli found.
7	Laryngeal case.	15 days.	On the twelfth day, all virulent. On the fifteenth, some virulent and some not virulent.
8	Severe case.	2 months.	Produced a slight local œdema only when injected into guinea-pigs. Fully virulent.
	Koplik:[19]		
9	Mild case.	14 days.	Virulent. A week later the bacilli obtained were not virulent.
10	Mild case.	7 days.	Fully virulent. (This was twenty-fourth day of the disease.)
	Loeffler:[22]		
11	Moderate case.	8 days.	

Escherich:[18] In a number of cases the Loeffler bacilli were found to persist after the disappearance of the membrane. In all of these the bacilli were as virulent as those obtained at the height of the disease.

Morse[13] in twenty-five cases found the average length of time the Lœffler bacillus remained in the throat after the disappearance of the membrane was ten days.

The average duration was the same for both nose and throat, although in some cases the bacilli were found in the throat much longer than in the nose, and *vice versa*. The bacilli disappeared in one case the day after the throat was clear, in another three days after, and in another four days after. The longest periods during which they persisted were twenty-two and twenty-seven days. The bacilli were tested from only one case, and these were fully virulent ten days after the disappearance of the membrane from the throat.

Tobiesen[23] found virulent diphtheria bacilli in the throats of 24 out of 46 patients at the time of their discharge from the hospital. The majority were children between six and twelve years of age. The following table gives the length of time after convalescence that the diphtheria bacilli were found:

Severity of Case.	Number of Cases.	Persistence of Bacilli after Disappearance of Membrane at Time of Examination at Discharge.
		Days.
Mild	1	4
Moderate	5	4
Moderate	4	5
Moderate	4	6
Mild	1	8
Moderate	1	8
Moderate	1	9
Severe	1	9
Moderate	1	10
Mild	1	10
Moderate	1	11
Severe	1	16
Moderate	1	22
Moderate	1	31
	24	214 Average, 8½

In the twenty-two in which the bacilli were not found the length of stay in hospital of the patients after convalescence was about the same. Tobiesen's studies indicate that the existence of throat lesions rendered the conditions more favorable for the persistence of bacilli. The virulence of the bacilli was proven in 19 out of the 24. In 16 cases the guinea-pigs died within a period of fifty hours, and the autopsies showed typical lesions; in 2, local necrosis developed, followed by death in one animal and recovery in the other. In the last case the animal developed paralysis five weeks after the local symptoms had disappeared. From these results he draws the following conclusions:

In 19 out of the 24 persistent cases the Lœffler bacilli proved virulent, and the probability is, they were also virulent in the 5 not tested. In other words, one-half of the patients who are allowed to leave the hospital under the usual conditions carry virulent bacilli in their throats, and are capable of giving diphtheria to others. Clinical investigation alone can decide the frequency with which these convalescent cases infect others. This investigation must be carried on with great caution. In the 24 investigated by Tobiesen he excluded those where numerous cases had occurred in the house besides the ones under investigation. Among those remaining he discovered one where the convalescent child was the almost certain cause of diphtheria in another.

Original Investigations.—In order to test the virulence of the bacilli in the throats of convalescent cases they were obtained in pure culture from the healthy throats of sixteen convalescent diphtheria cases and used for the inoculation of guinea-pigs. The following table gives the results of these experiments:

Case No.	Severity of Diphtheria in the Case.	The Bacilli Tested had Persisted after Recovery for—	Virulence.			Persistence from Inception of Disease.	
			Weight Guinea-pig. Gms.	Amount Injected.	Life of Guinea-pig after Injection.	Still Present.	Absent.
		Day		c.c.		Days.	Days.
1	Rather severe case.	8	392	1.33	60–70 hours.	13	17
2	Mild case	10	250	0.50	8 days.	12	19
3	Mild case	12	290	1.25	13 days.	.	..
4	Severe case	18	229	1.00	9 days.	21	30
5	Moderate case	6	549	1.25	14 days.	10	22
6	Mild case	33	226	1.00	Extensive necrosis with final recovery).	38	..
7	Very mild case.	12	440	1.50	40 hours.	14	22
8	Mild case	8	310	2.00	40 hours.	16	20
10	Very mild case.	25	505	1.66	40 hours.	30	..
11	Very mild case (nasal)	10	253	2.00	40 hours.	10	..
12	Mild case	6	490	1.66	40 hours.	24	..
13	Mild case	8	450	1.33	40 hours.	13	20
14	Mild case	12	367	1.33	40 hours.	19	..
15	Fairly severe case.	26	347	1.33	5 days.	35	44
16	Mild case	50	410	3.00	2 days.	56	..

In each case, in testing the virulence of the bacilli derived from it, we employed the last culture or the next to the last culture made from it in which the bacilli were found to be present. The results in the sixteen cases tested, as well as in those before recorded by others, prove conclusively that the bacilli, which in a certain proportion of cases persist in the throat after an attack of diphtheria, are always virulent for some time. In the exceptional cases in which the bacilli persist for a very long time, it is found they occasionally lose their virulence a few days before their final disappearance; while in other cases they retain their virulence to the end. That the cases themselves are not so liable to spread diphtheria is probably because of the relatively small number of bacilli present in convalescent throats as compared with the number found in those showing the lesions of diphtheria.

During the last year 2,566 cultures have been made from the throats of convalescent cases of diphtheria in order to determine the length of time during which the Lœffler bacilli persisted. The cultures were made at short intervals after the complete disappearance of the exudate, until the throat was found to be free of diphtheria bacilli. The custom was to make the second culture three days after the complete disappearance of the membrane, and then, when necessary, to make further cultures about every fourth or fifth day. Completed observations in 605 consecutive recovered cases give the following facts: In 304 of these 605 cases the diphtheria bacilli disappeared within three days after the complete disappearance of the exudate; in 301 cases the diphtheria bacilli persisted for a longer time, viz., in

176 cases for seven days; in 64 cases for twelve days; in 36 cases for fifteen days; in 12 cases for three weeks; in 4 cases for four weeks; in 4 cases for five weeks; and in 2 cases for nine weeks after the time when the exudate had to all appearances completely disappeared from the upper air-passages.

4. (a) What Relation has the Pseudo- and Non-virulent Diphtheria Bacillus to the True Virulent Bacillus? —In 1888 Hofmann published the results of the bacteriological examinations of a number of diseased and healthy throats, which for a time threw doubt on the specific character of the Loeffler diphtheria bacillus. Further research has entirely dispelled the confusion which his discoveries seemed to make, but the results of these studies and of similar ones on the virulent and non-virulent bacilli are of such practical importance in relation to the bacteriological diagnosis of cases of suspected diphtheria that a detailed account of the work of the subsequent investigators, as well as that of the Health Department, will be presented.

Hofmann's [15] results were similar to those of Loeffler, in that he found the virulent bacillus in all of eight cases of true diphtheria, but in further search he was surprised to find in the throats of twenty-six out of forty-five persons, none of whom was suffering from diphtheria, a bacillus which very closely resembled the Loeffler bacillus. Some of these persons were suffering from scarlet fever, measles, or some other disease, while many were entirely healthy. The bacilli from a number of these healthy throats were obtained in pure culture and inoculated into animals. The majority had no virulence whatever. The bacilli from the different cases varied somewhat in their characteristics. Some in appearance, manner of staining, and growth on media seemed identical with the Loeffler bacillus, while others presented slight but constant differences. Between the extremes were many gradations.

Those bacilli which did not possess all the characteristics of the virulent bacillus differed in the following respects: They were shorter, thicker, and more uniform in size. On agar they grew in whiter and thicker colonies whose circumference was more circular and less notched. They also grew at a lower temperature than the virulent bacilli (20° to 22° C.).

Hofmann was undecided whether all of these bacilli were really Loeffler diphtheria bacilli, which had lost their virulence, or whether they were a different species of bacteria and of a saprophytic nature. He was also undecided whether, even among these non-virulent bacilli, there might not be included different species. Hofmann's death prevented further attempts on his part to solve this problem, and different investigators since that time have been divided in their opinions; some taking the view that these bacilli were derived from true Loeffler bacilli, having merely lost their virulence; others that they were a different species, having no connection with the Loeffler bacillus; and still others consider the matter as undecided. The results of two other important series of investigations should be considered here, those of Roux and Yersin, and those of Escherich.

Roux and Yersin found in a hospital for children in Paris, where cases of diphtheria occurred from time to time, that fifteen out of forty five children contained in their healthy throats non-virulent bacilli resembling the Loeffler bacillus. In a French village where no diphtheria had been present for a long time they made cultures from the healthy throats of fifty-nine children living in a school. In twenty-six of these non virulent bacilli were found.

In an examination of the throats of ten attendants in a diphtheria hospital, non-virulent bacilli were found once. Thus, in one hundred and fourteen healthy throats the non virulent bacilli were found forty-two times. In all of these throats the bacilli were present in very small numbers. They found the same bacilli twice in six children with mild sore throats, and five times in seven children sick with measles. It should be noted that these examinations were made chiefly in a hospital and in a school, both for children, and in both of these the children were confined together for considerable periods of time, and the direct transmission of the bacilli from one throat to another would be likely to occur. The unusually large percentage of children in which they were found might thus be accounted for.

The bacilli found, when studied in pure culture, differed somewhat from each other. The majority were identical in all their characteristics with the Loeffler bacillus, except as to their lack of virulence. The minority resembles those described by Hofmann, being shorter and thicker and growing at a lower temperature than the characteristic Loeffler bacilli. They made the important observation that non-virulent bacilli, which they tested, when grown in broth, caused the same changes in the reaction as the virulent forms, namely, from alkaline to acid in forty-eight to seventy-two hours, and later back again to alkaline in the course of some weeks. These changes were found to occur even more rapidly in the cultures of the non-virulent than of the virulent bacilli. Roux and Yersin regarded the occasional slight differences in growth, shape, and staining, as too slight and inconstant to distinguish the virulent from the non-virulent bacilli. Animal experiments alone sufficed to determine the question of virulence, and they regarded as arbitrary a division founded on the reaction of the guinea-pig to inoculation; since they found bacilli from cases of diphtheria may possess every degree of virulence, from those which cause death within twenty-four hours to those which cause only a temporary œdema. With such variations it is a difficult matter to determine what should be the proper line of division between the virulent and the non-virulent bacilli.

To fully prove these bacilli belong to the same species they believe it is necessary to derive non-virulent bacilli from the virulent ones, and to give virulence to those entirely lacking it.

They found it was possible to produce an attenuation of the virulence of the bacilli in a number of ways. For instance, if a current of sterile air is kept passing through a broth culture of diphtheria bacilli, maintained at a temperature of 39½° C., after about two weeks some of the bacilli begin to lose their virulence, and at the end of about four weeks all of the bacilli have lost all of their virulence and produce non-virulent cultures. A little while after losing their virulence the bacilli remaining in the culture died.

They also found that if from time to time cultures were made from dried bits of membrane, a period finally came when the bacilli, although alive, had become non-virulent. Thus they had fulfilled the first condition.

The attempt to restore to bacilli the virulence which they had entirely lost was not so successful. They found it possible to greatly increase the virulence of bacilli by injecting them together with a virulent culture of the streptococcus of erysipelas. The bacilli obtained from animals which had succumbed to this double inoculation were found to have fully regained their virulence. Roux and Yersin were unable, on the other hand, to give back virulence to those bacilli which had been completely robbed of their virulence by the above methods, or to those which had no virulence originally when obtained from the throat. Thus of the two proofs necessary to establish the identity of the virulent and the non-virulent forms, they had obtained the first fully, the second only partially.

As additional proof of the identity of the virulent and non-virulent bacilli, they brought forward the fact that they found the latter more frequently in patients recently convalescent from true diphtheria than in those who had never had the disease, and that the bacilli which had artificially been deprived of their virulence frequently were changed in other respects, so as to resemble in all ways the bacilli which were originally lacking in virulence. From their studies they concluded the non-virulent and virulent bacilli were one and the same species of bacteria.

If we now turn to the work of Escherich we find results

which tend to show the virulent and some of the non-virulent bacilli are different species of bacteria.

He first lays stress on the methods to be employed in testing the virulence. He advises that the animal inoculations be made always from broth cultures, which have been grown for forty-eight hours at 37½° C., and that the amount of the culture be regulated by the size of the animal. Under these precautions he found the bacilli from every case of diphtheria examined to be fully virulent, and in a few cases, where he obtained characteristic bacilli from the healthy throats of persons exposed to diphtheria, he found them also to be virulent.

Escherich did indeed find in a moderate number of throats of persons not suffering from diphtheria a non-virulent bacillus similar to those described by Hofmann. Thus in Munich he found this non-virulent bacillus in 2 throats out of 70, and in Graz in 11 out of 250, or 13 times in 320 cases. These bacilli, however, all possessed certain cultural and morphological characteristics which were sufficient to separate them from the virulent bacilli. They were, as in some described by Hofmann, plumper and shorter than the Loeffler bacilli and more uniform in size. The growth on agar was more luxuriant and whiter than is the case with the diphtheria bacilli. He noticed two new points of difference which seemed to him important. The non-virulent or pseudo diphtheria bacilli, when spread on a cover-glass, lie in parallel rows, while the virulent diphtheria bacilli lie at every angle and in the most varied positions. The second difference was still more marked. He found, as had all others who had noticed this point, that the virulent bacilli in their growth in alkaline bouillon changed the reaction of the bouillon to acid in the course of forty-eight hours. The amount of acid formed differed in different cultures, and had no relation to the degree of virulence. He then noticed the pseudo diphtheria bacilli always made the bouillon more alkaline instead of acid. Therefore, if at the end of forty-eight hours litmus was added to the different bouillon-cultures it turned red in the virulent ones, and blue in the pseudo-diphtheritic non-virulent ones. Although this will be referred to again it should be noticed that this difference in reaction was not found by Roux and Yersin in the cultures of the non-virulent bacilli tested by them.

Escherich, in conclusion, states his position as follows: "Since we have found constant cultural differences between the true and the pseudo-diphtheria bacilli we can give the pseudo diphtheria bacilli no diagnostic value. We do not find it to be a frequent inhabitant of the mouth. Chronic throat inflammations and measles seem to render the throat more liable to its invasion."

He did not find, as Roux and Yersin and Fraenkel had, that it was possible to determine from the abundance of the colonies of bacilli present whether they were composed of virulent or non-virulent bacilli.

Up to the present time the results, so far as they are known to the writers, are given in the following tables:

	Von Hofmann.[15]	Loeffler.[3]
Morphology.	Some bacilli identical with those of Loeffler, others were shorter, thicker, and more uniform in size.	Somewhat larger than virulent bacilli, and more tendency to produce swollen ends.
Growth in bouillon and reaction.	Similar to virulent.	Similar to virulent.
Growth on blood-serum.	Sometimes identical with Loeffler bacilli; again found in larger and somewhat whiter colonies.	Similar to virulent.
Growth on agar.	Grows more luxuriantly and spreads more on the surface. May become of a dirty brown color in central part of colonies.	Colonies had less jagged edges and were of a whiter hue.
Frequency met with.	In 45 throats, comprising some healthy and some the seat of non-diphtheritic inflammations, they were found in 26.	Once with virulent bacilli from a case of diphtheria.
Opinion as to the nature of the bacilli.	Is doubtful whether these non virulent bacilli belong to the same species as the virulent diphtheria bacilli, or whether they are of a different species.	Believes them to be of a different species, but only to be separated by animal cultures.

	Escherich.[16]	Beck.[16]
Morphology.	Bacilli shorter, plumper, and more uniform in size. When a drop of bouillon-culture is smeared on a cover-glass the bacilli are found to lie in parallel rows.	Shorter, plumper bacilli as a rule, but some more like virulent bacilli.
Growth in bouillon and reaction.	More luxuriant growths, with tendency to cause cloudiness; when grown in neutral litmus bouillon the litmus turns blue after 2 or 3 days.	Quicker and more luxuriant in growth.
Growth on blood-serum.	Fairly characteristic, but apt to be a more luxuriant and whiter growth.	Somewhat more luxuriant and of a more yellow color.
Growth on agar.	Grows more luxuriantly and spreads more on surface; may become brownish in color after some days.	Colonies less jagged on margin and more yellow in hue.
Frequency met with.	In Munich in 2 out of 70, In Graz in 11 out of 250 healthy throats and those the seat of non-diphtheritic lesions examined. } 13 in 320	In 66 well children found in 22; in 41 non-diphtheritic affections in 14, or in a total of 107 found them in 36. Also along with virulent bacilli in true diphtheria.
Opinion as to the nature of the bacilli.	Believes that they have no relation to the virulent diphtheria bacilli, and that they can be separated pretty accurately by cultural differences.	Believed that the non-virulent forms found by him were of a different species from the virulent, and were saprophytic in nature.

	Koplik,[19] 1st Paper.	Koplik,[19] 2d Paper.
Morphology.	Short, plump, uniform in size. Take a more uniform stain.	Identical in form and size with virulent and characteristic stain.
Growth in bouillon and reaction.	More luxuriant, cloudy at first, afterward clearing, with abundant deposit; bouillon acid after forty-eight hours.	Cloudy; less abundant growth in bouillon to which glucose has been added; bouillon alkaline after forty-eight hours.
Growth on blood-serum.	More luxuriant and spreading.	More luxuriant, opaque, and whiter growth.
Growth on agar.	More luxuriant and spreading.	More luxuriant, opaque, and whiter growth.
Frequency met with.	In 4 mild throat inflammations.	In 2 following true attack of diphtheria. For first three weeks found virulent bacilli; then for two weeks there were non-virulent forms.
Opinion as to the nature of the bacilli.	Are of a different species from Loeffler bacilli.	

	Roux and Yersin.[4]	Abbott.[21]
Morphology.	Majority identical with virulent bacilli. The minority of shorter, plumper, and more uniform variety.	Bacilli from 3 cases were identical with virulent forms; from 1 they were larger than the virulent average.
Growth in bouillon and reaction.	Characteristic, except for slight cloudiness. Changes of broth were same as in virulent forms, but somewhat more rapid.	Growth in bouillon same as in virulent forms, except the changes from alkaline to acid, and later back again to alkaline were more rapid than in case of virulent bacilli.
Growth on blood-serum.	Same as in virulent.	Characteristic.
Growth on agar.	Same as in virulent, varying within the limits noticed in different virulent cultures.	Two of 4 characteristic, 1 more luxuriant in growth, and 1 giving colonies with darker central portion.
Frequency met with.	In 104 healthy children's throats found 41 times; 10 adults once. In 6 mild throat inflammations twice; in 7 sick with measles 5 times.	Four times in 53 throats. Some healthy, others the seat of moderately severe inflammations.
Opinion as to the nature of the bacilli.	Believed the non-virulent to be of the same species as the virulent; they were simply an attenuated form.	Non-virulent bacilli having all other characteristics of virulent bacilli to be of same species.
Note.		Pseudo diphtheria bacilli to show constant cultural differences.

	Fraenkel.[24]	Martin.[10]
Morphology.	Identical with virulent forms.	Short, plump bacilli.
Growth in bouillon and reaction.	Characteristic.	
Growth on blood-serum.	Characteristic.	
Growth on agar.	Characteristic.	More moist, luxuriant, and whiter. Grow at room temperature.
Frequency met with.	In number of healthy conjunctivæ and in some cases of mild tonsillitis, and with virulent bacilli in diphtheria. Figures not given.	In quite a number of diphtheria cases running a mild course.
Opinion as to the nature of bacilli.	Believes the virulent and non-virulent to be of the same species and includes under non-virulent, some causing local reaction.	An attenuated form of the virulent diphtheria bacillus.

If we review the remaining literature of this subject we find some investigators have been led by their results to adopt views similar to those of Roux and Yersin, others to those of Escherich, and still others have been forced to content themselves with the position of Hofmann, viz., that we are not yet in a position to affirm whether all these bacilli are of one or of different species of bacteria.

If we inspect closely the descriptions of the non-virulent bacilli, we find there seem to be two forms which stand out distinctly as separate varieties with which the others can be grouped:

1st. Bacilli which are in all respects, except that they lack virulence, identical with the Loeffler bacillus, and which, like it, produce an *acid* in their growth in broth-cultures.

2d. Bacilli which are shorter, plumper, and more uniform in size than the (characteristic) Loeffler bacilli, and which produce an *alkali* in their growth in broth-cultures.

As we look over the tables we see that some observers have chanced to find one of these varieties, some the other, and some both. This has led to the present confusion.

TABLE SHOWING RESULTS OF CULTURES MADE FROM THE THROATS OF HEALTHY PERSONS WHERE THERE HAS BEEN NO HISTORY OBTAINED OF DIRECT CONTACT WITH DIPHTHERIA.

From Where.	Total Cases, Nos.	Virulent Characteristic Diphtheria Bacilli.	Non-virulent Characteristic Diphtheria Bacilli.	Non-virulent Pseudo-diphtheria Bacilli.
N. Y. Dispensary (by Dr. John H. Huddleston)....	1 to 151	3	12	21
Northern Dispensary.....	152 to 163	..	..	..
Vanderbilt Clinic..... ..	164 to 189	0	2	2
Throughout the City.....	190 to 193	0	4	0
College Phys. and Surg. (Students)..... ..	194 to 242	0	2	3
N. V. F. H. Dispensary.. ..	243 to 257	0	0	1
Orthopedic Hospital: Female Ward.....	258 to 267	0	3	..
Male Ward (through kindness of Dr. Chappell)..	268 to 275	0	0	0
N. V. Foundling Hospital, (by Dr. Adams).....	276 to 330	5	1	0
Totals.....	330	8	24	27

A COMPARATIVE TABLE OF NON-VIRULENT AND PSEUDO-DIPHTHERIA BACILLI.

	Non-virulent Diphtheria Bacilli.		Pseudo-diphtheria Bacilli.	
Case No. and Source.	New York, 66. (Throat.)	New York, 72. (Throat.)	Physicians and Surgeons, 30. (Throat.)	New York, 101. (Throat.)
Examination of bacilli in primary culture.	Abundant large characteristic diphtheria bacilli.	Abundant characteristic diphtheria bacilli.	Abundant short, even-stained bacilli. (See photograph of pseudo-diphtheria bacilli.)	Abundant short, even-stained bacilli (pseudo-diphtheria).
Growth in pure culture on serum at 37½° C.	Characteristic appearance of colonies.	Characteristic.	Fairly characteristic appearance of colonies.	Characteristic appearance of colonies.
Agar.	Fairly typical colonies.	Not typical colonies.	Coarsely granular colonies, with jagged, rough borders, and of about equal thickness throughout; brownish hue by transmitted light.	Fairly typical. More heavily pigmented and uniformly thicker than is characteristic of the virulent bacilli. Colonies nearly circular, with even borders.
Growth in neutral glucose broth.	Characteristic acid at end of forty-two hours.	Not characteristic. Broth cloudy for two days; acid at end of forty-eight hours.	Typical growth in rather coarse grains. Alkaline reaction at end of forty-eight hours.	Formation of thin pellicle and slight diffuse cloudiness. Alkaline reaction at end of forty-eight hours.
Virulence in guinea-pigs.	Guinea-pig, 216 gms.; 1.33 c. c. No reaction.	Guinea-pig, 164 gms.; 1.33 c. c. No reaction.	Guinea-pig, 405 gms.; 3 c. c. No reaction.	Guinea-pig, 400 gms.; 2 c. c. No reaction.
Clinical notes.	Bronchitis. Diphtheria in house three weeks previously.	Intestinal catarrh. No history of contagion.	Healthy throat.	Bronchitis. No history of contagion.
Sex.....	Female.	Female.	.....	Male.
Age.....	1 year.	15 months.	27 years.	10 years.

Original Investigations.—In order to study these various bacilli and to clear up, if possible, some of the questions connected with their classification, cultures were made upon blood serum from 330 healthy throats (children 280, adults 50).

When any of the varieties of bacilli described above were discovered in the cultures they were isolated, and in the great majority of cases tested, as to their virulence, on guinea-pigs. The results of these studies are given in the tables above. The bacilli formed may be divided into three groups.

1. Virulent Loeffler's diphtheria bacilli, characteristic in growth, producing acid in bouillon.

2. Bacilli identical with Loeffler's diphtheria bacillus in growth, producing acid in bouillon, but having no virulence.

3. Bacilli not having all the characteristics of the Loeffler bacillus in growth, producing alkali in bouillon, and having no virulence.

In the above table we find bacilli possessing the characteristics of the virulent diphtheria bacilli except that of virulence were found in 24 cases, namely:

Nos. 7, 33, 52, 63, 66, 72, 103, 105, 110, 114, 124, 132, 188, 189, 190, 191, 192, 193, 198, 212, 258, 259, 260, 297.

These bacilli were abundant in the primary cultures from 17 cases, and present in small numbers only in the cultures from 7.

They were on the average a little longer than the virulent bacilli from the cases of suspected diphtheria examined on the same days. In broth the bacilli from 13 of the 24 cases grew characteristically, while from 6 they caused a more or less dense cloudiness. It was found, however, that sometimes the virulent bacilli produced the same effect, though never to the same degree, as the bacilli from case 191. In 5 cases the bacilli were not grown in broth. In all the cases in which broth cultures were made (19) the bacilli produced acid in their growth. When their acid-producing power was compared with that of an equal number of virulent cultures no marked difference could be noted. Some virulent bacilli were found to produce more acid than the non-virulent ones, while others produced less.

Upon blood-serum the bacilli grew in a manner characteristic of the Loeffler bacillus.

Upon agar the bacilli from 11 cases grew as the virulent bacilli usually grow, while from 7 they grew in a less typical manner, but always in ways seen exceptionally in the virulent form. Guinea-pigs were inoculated with the bacilli from 15 cases. The lack of virulence in the bacilli from the remaining 9 cases was taken for granted from their close association with the 15 tested. Half-grown guinea-pigs were employed, and they were inoculated under the skin with from one-half to three-fourths per cent. of their weight of a forty-eight hour broth-culture. In only one animal was there any appreciable reaction, and in this the local induration caused passed away within four days. A very slight degree of immunity was given to some of the pigs by the injection.

The bacilli persisted in 4 of the throats for four weeks, in 1 for three weeks, in 3 for two weeks, and in some of the others for shorter periods.

Column three of the table shows that in 27 cases pseudo-diphtheria bacilli were found corresponding to those described by Hofmann and Escherich and photographed by Koplik.[19] Upon agar some of the bacilli grew in a similar manner to the diphtheria bacilli, while others grew as described in the table given opposite. The bacilli were smaller, shorter, thicker, and more uniform in size than the Loeffler bacilli and always formed alkali in their growth in broth. These bacilli were never virulent in animals.

Guinea-pigs were inoculated with large amounts—one-half to one per cent. of their weight—of broth cultures of bacilli obtained from 8 cases without showing any reaction.

As is shown in column one of the table, virulent diphtheria bacilli were found in 8 of the 330 cases.

They were in all probability derived from mild cases of unrecognized diphtheria, or from healthy children who were carrying the bacilli in their throats. The number of such infected children is indicated by the results of studies described in the following pages.

4. (*b*) *Are Virulent Diphtheria Bacilli ever Present in the Throats of Healthy Persons who have been brought in Contact with Diphtheria?*—The search for the origin of obscure cases of diphtheria has revealed the fact that it is possible for the human throat to become the habitat of the virulent Loeffler bacillus without any visible lesions resulting. Thus Loeffler[3] found the virulent bacillus once, Fraenkel[24] twice, and Escherich[18] found it in several cases. In one of Escherich's cases the history is so significant as to be worth repeating. It was noticed among the children coming under the care of a certain apparently healthy nurse a number of cases of diphtheria were developing. A bacteriological examination being made, her throat was found to contain very numerous virulent diphtheria bacilli. These remained present and virulent for weeks. A similar and interesting case is reported by Feer.[25] In a diphtheria epidemic occurring in a hospital ward, due to a single infection, the throats of seven children became infected. The infection caused fatal diphtheria in four, an acute angina without membrane in two, and no symptoms whatever in one. In all of these the bacilli were abundant and equally virulent. Many similar examples have been met with by us.

A very interesting investigation has been carried on to determine how frequently the throats of healthy children became infected in families where one is sick with diphtheria, and where little or no isolation is possible.

As will be seen by the following tables, the throats of the healthy children of fourteen families, in which one or more of the other members had diphtheria, were examined. There were in all forty-eight healthy children. In fifty per cent. of these diphtheria bacilli were found; forty per cent. developed later, to a greater or less extent, the lesions of diphtheria.

Family.	No. of Cases examined aside from the Original Case of Diphtheria.	L. Bacilli found in—	L. Bacilli not found in—	Remarks.
A.	1	0	1	Isolation partial.
B.	3	3	0	No isolation; all three cases subsequently developed diphtheria.
C.	2	1	1	No isolation
D.	1	1	0	No isolation
E.	3	1	2	No isolation.
F.	4	1	3	Isolation partial.
G.	5	3	2	Isolation partial.
H.	4	3	1	No isolation.
I.	4	1	3	Isolation partial.
J.	8	3	5	Isolation partial.
K.	4	1	3	Isolation partial.
L.	3	1	1	Isolation partial.
M.	5	3	2	Isolation partial.
N.	1	1	0	No isolation.
14	48	24	24	

Of the above cultures in which the Loeffler bacilli were found, in six the virulence was tested in the usual way. The results are stated in the following table:

Family No.	Case No.	Amount Bouillon-cult. inoc.	Guinea-pig. Weight.	Virulence.	Clinical History.
B.	1	1.33 c. c.	337 gm.	Died in 40 hrs.	Developed fatal diph. 1 day after cult. was taken.
G.	2	1	205 gm.	Died in 44 hrs.	Developed tonsillar diph. 2 days after cult. was taken.
H.	3	1.33	222 gm.	Died in 48 hrs.	No subsequent development of diphtheria.
K.	4	1.33	300 gm.	Died in 40 hrs.	No subsequent development of diphtheria.
M.	5	1.66	490 gm.	Died in 40 hrs.	No subsequent development of diphtheria.
N.	6	1	250 gm.	Died in 40 hrs.	No subsequent development of diphtheria.

In considering the high percentage of cases in which the virulent Loeffler bacillus was found, it must be remembered in these families the conditions were the best possible for the transmission of the contagium.

In numerous instances cultures have been made from the throats of healthy children in families where the diphtheria case was well isolated; in such cases the bacilli have been found in less than ten per cent. of the children.

It may be interesting to detail here two instances out of many observed in which the virulent bacilli of diphtheria derived from healthy throats have been the cause of diphtheria in others.

1. A child was admitted into a hospital ward in an anæmic condition and with a chronic coryza. Five days later four children in his neighborhood developed diphtheria. Two of these died. In seeking the cause of the diphtheria suspicion was directed to the child by a slight nasal discharge. Bacteriological examination showed this secretion contained many diphtheria bacilli. On further examination it was found the child came from a family in which three weeks before there had been a case of diphtheria.

2. In a family of eight children one child sickened with diphtheria; and a second child, a baby, was sent to a neighbor. The next day cultures showed this baby, as well as two of the other children, all of whom were apparently healthy, were infected with diphtheria bacilli. The three apparently healthy but infected children, as well as the sick one, were at once quarantined, but already one of the family to which the baby had been sent had contracted diphtheria from it.

The practical value of bacteriological examinations of the throats of healthy children in families where isolation has not been carried out in the first days is further shown by the fact that those children in whom the bacilli are found are extremely apt to develop diphtheria in the course of a few days, when no cleansing treatment is adopted, while they seem much less liable to do so if kept under treatment.

The detection of the virulent bacilli in throats prevents the dissemination of diphtheria by allowing us to isolate those infected. A very striking instance of this was the following: In a family of four children one was sick with diphtheria. The Department Inspector found three other children in the same bed with the sick one, who was constantly spitting upon and soiling the bedclothes. He made cultures from these three children, whose throats appeared healthy, as well as from the sick one; all contained abundant characteristic Loeffler bacilli. (These were later shown to be virulent by the inoculation of guinea-pigs.) When the Inspector visited the same family three days later, he found two of the previously healthy children had meanwhile sickened and died, and that the third was severely ill. This child finally recovered.

From the observations detailed above we cannot escape the conclusion that all members of an infected household should be regarded as under suspicion, and in those cases where isolation is not enforced, the healthy as well as the sick should be prevented from mingling with others until cultures from the throat have shown the absence of bacilli or a sufficient lapse of time gives the presumption that they are not carriers of the contagium.

Summary and Conclusions on Diphtheria Bacilli in Healthy Throats.—We have found that children, and to a less extent adults, who are brought in direct contact with true cases of diphtheria very often receive the diphtheria bacilli into their throats, and that these bacilli may persist and develop in these throats for days or weeks. In some cases we have found that true diphtheria followed the appearance of the bacilli in the respiratory passages, while in others no disease developed, though they might be the source of diphtheria in others. The examination of the throats of three hundred and thirty healthy persons in whom no contact with diphtheria was known, revealed the presence of virulent bacilli in but eight persons, two of whom later developed diphtheria.

We must conclude, then, that virulent diphtheria bacilli are to be found in the throats of a small proportion of healthy persons throughout the city, and that they have been derived either directly from diphtheria cases or from those who have been in contact with them. The examinations of the throats of the three hundred and thirty healthy persons showed that in twenty-four bacilli existed in every way identical with the Loeffler bacillus, except that they were not virulent in animals. As the bacilli in cases of true diphtheria are known to gradually lose their virulence, and as this loss of virulence can be caused artificially, it seems to the writers that these bacilli, characteristic except as to virulence, should be regarded as true diphtheria bacilli which have lost their virulence.

The examination of the same throats showed that, in twenty-seven there were bacilli present which were so uniform in their peculiarities as to staining, size, shape, and the production of an alkali instead of an acid, that there seems to us to be even more reason to separate them from the diphtheria bacillus than there is, for example, to separate the colon bacillus from that of typhoid.

TABLE I.—FALSE DIPHTHERIA.

Family Number.	Children in Family.	Case Number.	Age.	Severity.	Duration of Illness.	Mortality.	History of Contagion, etc.
1	1	1	4 years	Mild	7 days	Recov.	Came from a house where diphtheria was present.
2	2	2	11 years	"	2 days	"	None.
3	3	3	2 years	Severe	30 days	"	Complicated by pneumonia.
4	2	4	1½ year	Mild	5 days	"	None.
5	1	5	.....	.....	.....	"	"
6	5	6	8 years	"	7 days	"	"
7	3	7	6 years	"	5 days	"	These two cases occurred together.
		8	3 years	"	3 days	"	
8	4	9	6 years	"	2 days	"	These two out of the four children attacked nearly together; one with simple tonsillitis, the other with suppurative tonsillitis.
		10	9 years	"	5 days	"	
9	0	11	.....	"	10 days	"	Complicated by scarlet fever.
10	2	12	6½ years	"	.....	"	None.
11	3	13	3 years	"	7 days	"	The child was first taken sick; a few days later the servant developed sore throat.
		14	20 years	"	5 days	"	
12	3	15	2 years	"	8 days	"	None.
13	4	16	11 years	"	4 days	"	"
14	1	17	15 years	"	3 days	"	"
15	4	18	2½ years	"	3 days	"	"
16	4	19	9 years	"	2 days	"	"
17	3	20	3 years	"	3 days	"	"
18	4	21	5 years	"	3 days	"	"
19	2	22	10 years	"	5 days	"	"
20	3	23	8 years	"	30 days	"	"
21	2	24	4 years	"	7 days	"	Another mild sore throat in house.
22	2	25	3½ years	"	2 days	"	None.
23	0	26	21 years	"	12 days	"	"
24	5	27	7 years	"	3 days	"	"
25	5	28	4 years	Severe	14 days	"	These cases occurred at same time in family. No others developed in house.
		29	9 years	Mild	2 days	"	
26	2	30	1½ year	Severe	7 days	"	Complicated by pneumonia
27	0	31	21 years	Mild	7 days	"	None.
28	2	32	25 years	"	5 days	"	Exposed to scarlet fever.
29	3	33	6 years	"	7 days	"	None.
30	0	34	1½ year	Severe	7 days	"	"
31	2	35	10 years	Mild	6 days	"	"
32	1	36	21 years	"	2 days	"	Case of true diphtheria in another family in house.
33	3	37	29 years	"	4 days	"	Scarlet fever in family.
34	2	38	7 years	"	2 days	"	None.
35	4	39	2 years	"	4 days	"	Scarlet fever in house one month before.
36	3	40	2 years	"	9 days	"	Scarlet fever in house one month before.
37	3	41	2 years	"	7 days	"	None.
38	3	42	20 years	"	3 days	"	"
39	3	43	30 years	"	1 day	"	The mother in the first case was never really sick; the child had very slight tonsillitis.
		44	3 years	"	7 days	"	
40	3	45	3 years	"	4 days	"	None.
41	2	46	19 years	Severe	10 days	"	"
42	0	47	2½ years	Mild	10 days	"	"
43	3	48	6 years	"	7 days	"	"
44	6	49	2 years	Severe	7 days	"	"
45	3	50	18 years	Mild	5 days	"	"
46	2	51	2½ years	Severe	10 days	"	"
47	4	52	3½ years	Mild	3 days	"	Another case in house.
48	0	53	24 years	"	4 days	"	None.
49	3	54	8 years	"	30 days	"	Scarlet fever as complication. Other cases of scarlet fever in house.
50	0	55	2 years	"	10 days	"	None.

TABLE II.—FALSE DIPHTHERIA.

Family Number.	Children in Family.	Case Number.	Age.	Severity.	Duration of Illness.	Mortality.	History of Contagiousness.
1	4	1	8 years	Mild	2 days	Recov.	First case one week previous to second. No others in house.
		2	5 years	"	5 days	"	
2	1	3	30 years	"	1 day	"	None.
3	2	4	32 years	"	2 days	"	"
4	4	5	11 years	"	6 days	"	"
5	0	6	16 years	"	2 days	"	"
6	0	7	19 years	"	5 days	"	Scarlet fever in house.
7	2	8	19 years	Severe	5 days	"	Followed surgical operation on throat.
8	0	9	19 years	Mild	3 days	"	Scarlet fever in house.
9	0	10	2 years	Severe	15 days	"	None.
10	7	11	16 years	Mild	1 day	"	"
11	2	12	12 years	"	3 days	"	"
12	1	13	4 years	"	3 days	"	Scarlet fever in house.
13	3	14	2 years	"	3 days	"	" " " "
14	0	15	3½ years	"	3 days	"	None.
15	5	16	4 years	"	3 days	"	These two children were taken sick together; one with mild "croup," the other with tonsillitis.
		17	2 years	"	2 days	"	
16	1	18	8 years	"	2 days	"	None.
17	0	19	3 years	"	3 days	"	"
18	2	20	12 years	"	4 days	"	Scarlet fever as complication.
19	3	21	6 years	Severe	7 days	"	Scarlet fever previously in house.
20	3	22	9 years	"	6 wks.	"	Scarlet fever as complication.
21	0	23	4 years	Mild	3 days	"	None.
22	1	24	2½ years	"	2 days	"	"
23	4	25	5 years	"	5 days	"	"
24	1	26	9 years	"	3 days	"	Measles in house.
25	4	27	20 years	"	7 days	"	This and following case occurred in same house, one week apart.
26	4	28	22 years	Severe	7 days	"	These three children slept together. Two had very mild sore throats, while the third had a more severe attack, complicated by mumps.
27	4	29	6 years	Mild	12 days	"	
		30	5 years	Severe	21 days	"	
		31	3 years	Mild	5 days	"	
28	..	32	25 years	"	10 days	"	None.
29	2	33	13 years	"	6 days	"	"
30	1	34	4½ years	"	10 days	"	These two cases, mother and child, had sore throats within three days of each other.
		35	26 years	"	5 days	"	
31	4	36	8 mos.	Severe	14 days	"	Complicated by scarlet fever. Other cases in family.
32	3	37	5 years	"	30 days	"	Scarlet fever as complication.
33	5	38	9 years	Mild	1 day	"	A sister had scarlet fever.
34	1	39	30 years	Severe	5 days	"	None.
35	1	40	2 years	Mild	4 days	"	"
36	4	41	37 years	Severe	14 days	"	None. Suppurative tonsillitis.
37	2	42	4 years	Mild	4 days	"	None.
38	0	43	20 years	"	4 days	"	"
39	1	44	9 years	"	1 day	"	"
40	0	45	21 years	"	7 days	"	"
41	2	46	20 years	"	5 days	"	Complicated by erysipelas.
42	2	47	1 year	Fatal	7 days	Died	Membraneous laryngitis and scarlet fever.
		48	5½ years	"	7 days	"	Scarlet fever from preceding.
43	2	49	2½ years	Mild	5 days	Recov.	None.
44	3	50	1½ year	Fatal	7 days	Died	Complicated by scarlet fever contracted from sister.
45	2	51	1½ year	"	7 days	"	None.
46	2	52	19 years	Mild	5 days	Recov.	These two cases occurred in the same house a few days apart.
		53	30 years	"	3 days	"	
47	5	54	16 years	"	6 days	"	None.
48	2	55	6 years	"	7 days	"	"
49	0	56	15 years	"	4 days	"	"
50	6	57	7 years	"	3 days	"	"

We have never found bacilli possessing these peculiarities to be virulent, nor have they seemed to have any connection with diphtheria. It seems to us that to these bacilli alone the name pseudo-diphtheria bacillus should be given. The few bacilli which do not seem to come under either of these divisions must await further study before being classified.

5. *To what Degree is Pseudo-diphtheria Communicable?*—In the general circular issued by the Department, it was announced that cases which bacteriologically proved to be false diphtheria would not be kept under the supervision of the Department. Some who approve heartily of the rest of the work of the Board in its dealings with diphtheria believe in this step it has made a mistake, and that the pseudo-diphtheria cases, though less contagious than the true, are yet sufficiently so as to render isolation necessary. From the experience obtained in the diphtheria hospital, it was believed these cases were

so little, if at all, contagious, that visiting by the Department inspectors was unnecessary. Nevertheless, to investigate this question thoroughly, four hundred and fifty cases of false diphtheria, as nearly consecutive as possible, were investigated, all sources of contagion sought for, and the cases followed up for two weeks after complete convalescence. In none of these was isolation or disinfection enforced by the Health Department.

TABLE III.—TRUE DIPHTHERIA CASES FROM THE SAME DISTRICT AS THE FALSE DIPHTHERIA IN TABLE I.

Family Number.	Children in Family.	Case Number.	Age.	Severity.	Isolation.	Mortality	History of Contagion, etc.
1	5	1	4 years	Moderate	Poor	Recov.	None.
2	4	2	11 years	"	"	"	Previous case four weeks before.
3	1	3	3 years	Severe	Good	Died	None.
4	4	4	2 years	Slight	None	Recov.	"
5	1	5	10 years	"	Good	"	Other cases in school.
6	2	6	3 years	Moderate	None	"	Two days before two children in same family died of "diphtheria." At time of culture child was not sick, but developed diphtheria later.
7	1	7	5 years	"	Good	"	None.
8	4	8	5 years	"	None	"	"
9	2	9	6 years	Slight	Poor	"	Two children had just died of diphtheria in family.
10	1	10	2 years	Severe	Good	Died	None.
11	4	11	3 years	Slight	None	Recov.	From Case 3, which was in adjacent room.
12	4	12	10 years	"	Good	"	None.
13	1	13	8 years	Severe	"	"	"
14	2	14	7 years	Slight	"	"	Sent away for safety from family in which there was a case of diphtheria.
15	2	15	4½ years	Severe	"	"	Fatal case previously in family.
16	1	16	1½ year	"	"	"	Servant had just come from Case 9, where there had been three cases in family.
17	1	17	2 years	Moderate	"	"	None.
18	4	18	5 years	"	Poor	"	Case of diphtheria on floor below.
19	3	19	9 years	"	Good	"	Two fatal cases just previous to this case.
20	3	20	3 years	Severe	"	"	Other cases in school.
21	1	21	4 years	"	"	Died	None.
22	5	22	6 years	Slight	Poor	Recov.	From a candy store. The proprietor's child had diphtheria. This store seemed the cause of several cases in street, and in a school.
23	3	23	5 years	Severe	"	"	Previous case in house.
		24	3 years	"	"	Died	
		25	8 years	Mild	"	Recov.	
24	6	26	2 years	Moderate	None	"	None.
25	1	27	4 years	"	Good	"	"
26	1	28	3 years	Slight	"	"	A case six weeks before in house.
27	1	29	5 years	Moderate	"	"	None.
28	4	30	5 years	"	Poor	"	From cases in school.
		31	6 years	Severe	"	Died	From brother.
		32	9 years	"	"	"	"
29	1	33	1½ year	"	Good	"	None.
30	2	34	5 years	Moderate	"	Recov.	From school.
31	2	35	3 years	Slight	Poor	"	None.
32	2	36	3 years	Malignant	"	Died	"
		37	6 years	"	"	"	From brother.
33	2	38	4 years	Moderate	Good	Recov.	From school or from a case next door three weeks before.
		39	2 years	Severe	"	Died	From family.
34	1	40	5 years	Moderate	"	Recov.	From a case in school.
35	4	41	7 years	"	Poor	"	This and following case had symptoms of a cold only.
		42	3 years	No lesions	"	"	
		43	8 years	Severe	"	Died	From family.
36	2	44	7 years	"	Good	Recov.	From school.
		45	30 years	Moderate	"	"	From family.
37	1	46	2 years	Malignant	"	Died	None.
38	2	47	4 years	Severe	None	Recov.	Had had a previous case one week before in family. Had just moved to new house.
		48	2 years	Slight	"	"	
39	2	49	3 years	"	"	"	None.
40	2	50	5 years	Severe	Poor	Died	From Case 14, originating from school.
41	1	51	2 years	"	Good	"	None.
42	1	52	5 years	"	"	Recov.	"
43	1	53	8 years	Slight	"	"	From case next door, or from school.
44	1	54	9 years	Severe	"	"	From school.
45	3	55	7 years	"	"	"	" "
46	1	56	6 years	Moderate	None	"	" "
47	2	57	8 years	Slight	Poor	"	" "
48	1	58	4 years	Severe	Good	"	None.
49	1	59	18 years	Moderate	"	"	"
50	3	60	5 years	"	"	"	"
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SUMMARY OF TABULATED CASES.

	Table I. (50 Families) Pseudo-diphtheria.	Table II (50 Families (Pseudo diphtheria.	Table III. (50 Families) True Diphtheria.
Total number cases	56	57	60
History of contact with other cases	7	7	33
No history of contact	49	50	27
Families in which more than one case developed	5	4[1]	13
Recovered	56	53	46
Died	0	4[2]	17
Cases complicated by scarlet fever	4	6[3]	

[1] Two had scarlet fever.
[2] Three of which had scarlet fever.
[3] Six others had been in contact with scarlet fever, but never showed any characteristic rash.

This is such an important question that the results of the investigation of one hundred consecutive cases are given here in tabular form. As a comparison, a similar table is given of fifty consecutive cases of true diphtheria which were taken from the same district and at the same time of the year as the first fifty cases of pseudo-diphtheria.

We find, therefore, in 113 cases of false or pseudo-diphtheria, occurring in 100 families, that 14 occurred at the same time with, or shortly after, some other case, and that it is possible to assume the disease had been directly communicated to them. In 9 of the 100 families more than one case developed. In these, as in the other 350 cases of pseudo-diphtheria investigated, it did not seem secondary cases were any less liable to occur where the primary case was isolated, than when it was not. In this connection we must remember mild throat inflammations are very frequent, especially in the early spring months, and that it is quite possible where two cases occurred in a family together, or within a short period of each other, that they may have both been due to exposure to some common condition rather than to direct transmission. The presence in nearly all healthy throats in New York City of streptococci renders this assumption almost a probability. The presence of the same germs in healthy throats as in those of patients suffering from pseudo-diphtheria prevents us from deciding the point by bacteriological examinations. A good illustration of the difficulty in determining whether these cases are communicable is the following:

In a family of eight there were, a mother, aged forty-five, six children whose ages ranged from twenty-five to ten, and a grandchild aged two. The family lived on the top floor of a tenement. Two days before being visited by the Inspector of Diphtheria a heavy, wet snow had fallen, which, as the roof leaked, caused the walls to become very damp. The next morning four of the children were attacked by more or less severe tonsillitis, which later developed follicular deposits or croupous patches. On the following day the baby had an attack of croup. All recovered and no further cases developed in the tenement. Here the exposure to dampness certainly seems to be the explanation of the first four cases of tonsillitis, but the occurrence of laryngitis in the baby might with equal justice be considered as due to the dampness, or as the result of communication from the others.

Even if further investigation should seem to prove the 14 cases of pseudo-diphtheria out of 113 tabulated which were found to have had some connection with other mild sore throats, were due to contagion and not to the simultaneous effects of atmospheric or other deleterious conditions, there would still be an important practical objection to sanitary supervision or enforced isolation. All of the 14 cases, except 3 who had scarlet fever, were mild, and, indeed, leaving out of consideration the cases which occurred as complications of scarlet fever, there was only 1 death in 103 cases of pseudo-diphtheria, and in this case, as has been said, there was no history of infection or contact with other cases.

6. *What are the Means by which Diphtheria is Trans-*

mitted?—The facts brought out by the investigations of the Department throw important light on the manner in which diphtheria is transmitted.

As related to this question let us first consider very briefly what is known of the duration of life of the Loeffler bacillus outside of the body.

In actual experiments the Loeffler bacillus has been found to live for long periods of time, namely: by Hofmann, on blood serum, for one hundred and fifty-five days; by Loeffler and by one of us (Park) for seven months; and in gelatine by Klein, for eighteen months. The bacilli have been found to live in bits of dried membrane by Loeffler for fourteen weeks, by us for seventeen, and by Roux and Yersin for twenty weeks. Dried on silk threads, Abel [26] reports they may sometimes live for one hundred and seventy two days, and upon a child's plaything, which had been kept in a dark place, they lived for five months.

As examples of the manner in which diphtheria may be contracted, he gives the following from Johannessen: [27]

A teacher developed diphtheria from passing the night in a room in which three weeks before a fatal case had occurred.

A child developed diphtheria after putting on the clothing worn by a child which had died of diphtheria two months before.

In a number of isolated dwellings diphtheria developed nearly a year after previous outbreaks, without there being any apparent possibility of a new infection taking place from outside.

We ourselves have met with a number of cases where the infected bedding or clothing has undoubtedly been the source of the infection.

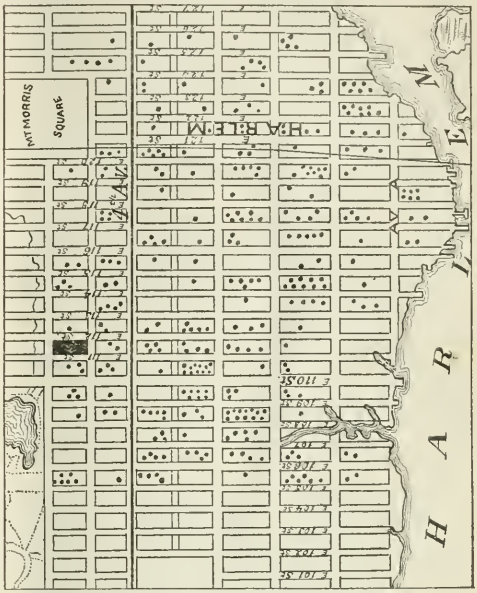
Sources from which Virulent Bacilli may be Received.—1. From the pseudo membranes, exudate, or discharges from diphtheria patients. 2. From the secretions of the nose and throat of convalescent cases of diphtheria in which the virulent bacilli persist. 3. From the throats of healthy individuals who have acquired the bacilli from being in contact with others having virulent germs on their person or clothing. In such cases the bacilli may sometimes live and develop for days or weeks in the throat without causing any lesion.

When we consider it is only the severe types of diphtheria that remain isolated during their actual illness the wonder is, not that so many, but that so few persons contract the disease. This seems to be more remarkable when we observe that, in a city like New York, the whole tenement-house district at least is an infected area. This has become evident from the observations made by the Department.

It has been the practice of the Department during the last year to plat upon a city map the location and date of every case of diphtheria in which the diagnosis had been settled by bacteriological examination. After several months the map presented a very striking appearance. Wherever the densely crowded tenements were located, there the marks were very numerous, while in the districts occupied by private residences very few cases were indicated as having occurred. It was also apparent the cases were far less abundant, as a rule, where the tenements were in small groups, than in the regions of the city where they covered large sections. At the end of six months there were square miles in which nearly every block occupied by tenement-houses contained marks indicating the occurrence of one or more cases of diphtheria; and in some blocks many cases (fifteen to twenty-five) had occurred.

As the platting went on from time to time the map showed the infection of a new area of the city, and often the subsequent appearance of a local epidemic. It was interesting to note two varieties of these local epidemics; in one the subsequent cases evidently were from neighborhood infection, while in the second variety the infection was as evidently derived from schools, since a whole school district would suddenly become the seat of scattered cases. At times in a certain area of the city, from which several schools drew their scholars, all the cases of diphtheria would occur (as investigation showed) in families whose children attended one school, the children of the other schools being for the time exempt.

Another fact noted—perhaps as important as the foregoing—was that with the most careful inquiry it was impossible to find, in about one-half of the cases of diphtheria which first occurred in a house, any connection with preceding cases of diphtheria.



An Average Section of the City in which each Dot indicates where a Case of Diphtheria Occurred during a Period of Six Months.

The two following histories are instructive as showing that special conditions, which are largely unknown to us, determine in every individual the occurrence or escape from diphtheria under exposure. Two children in a family were taken sick with diphtheria and removed to the hospital. The servant who was, and remained apparently, healthy went to another family, where the youngest child developed diphtheria a week later. In the meantime a case developed in the family living in the next apartment. There were in this latter family three other children which were not isolated at all from the sick child, yet none of these developed diphtheria.

The child of a man who kept a candy store developed diphtheria; there were four other children in the family and these were in no way isolated from the sick, yet none of them developed diphtheria, but children who bought candy at the store, and other children coming in contact with these in school developed diphtheria. The secondary cases ceased to develop so soon as the candy store had been closed.

Many similar histories could be given to illustrate the fact that the majority of persons, and even perhaps the majority of children, are not ordinarily very susceptible to diphtheria, and that in addition to receiving the germs of the disease into the respiratory passages they must be in a condition favorable to the development of the disease, and their mucous membranes must be vulnerable.

It seems to be generally true that the more malignant a case of diphtheria is, the more likely it is to cause diphtheria in others. This may be due to the high grade of virulence possessed by the bacilli or to the peculiar association of other micro-organisms in the membrane, or to

the wider dissemination of the infectious matter through the discharges.

It is also well known that young children are much more susceptible to diphtheria than older persons. It is comparatively rare for the parents of children sick with diphtheria to contract the disease, although in nearly every case they must at some time receive the germs into their throats.

Conclusions.—1. All inflammations of the mucous membranes due to the diphtheria bacillus of Loeffler should be included under the name diphtheria, and in this report they have been so included. An acute hyperæmia of the mucous membrane, caused by the Loeffler bacilli, is considered as truly diphtheria as an inflammation with pseudo-membrane or exudate, and a case in which the lesions are confined to the larynx or bronchi as truly diphtheria as one in which the tonsils and pharynx are involved.

2. Under pseudo diphtheria should be included all inflammations of the mucous membranes which simulate true diphtheria and which are due to streptococci, or, more rarely, other cocci.

3. The name croup, or membranous croup, should be regarded as a term merely indicating that the location of the pseudo-membranous or exudative lesion is in the larynx, and not as describing the nature of the disease, whether diphtheritic or pseudo-diphtheritic. In New York City at the present time eighty per cent. of the cases of "croup" are diphtheria.

4. The examination of cultures made upon solidified blood-serum under the conditions insisted on by the Department form a reliable method for determining whether the diphtheria bacillus is present or absent in a throat. For diagnostic purposes cultures should be made before the pseudo membranes or exudate begins to disappear.

5. Virulent diphtheria bacilli were apparently present in about one per cent. of the healthy throats in New York City at the time of these examinations. Diphtheria was, however, rather prevalent at this time. Most of the persons in whose throats they existed had been in direct contact with cases of diphtheria. Very many of those whose throats contained the virulent bacilli never develop diphtheria. We must therefore conclude that the members of a household in which a case of diphtheria exists should be regarded as sources of danger, unless cultures from their throats show the absence of virulent diphtheria bacilli.

6. The bacilli found in the original serum cultures, which in appearance and staining are identical with the typical Loeffler diphtheria bacillus, may be regarded, for diagnostic purposes, as virulent diphtheria bacilli, if the cultures have been made either from throats containing exudate, or from those of persons who have been in contact with true diphtheria, for investigation has shown that over ninety-five per cent. of such bacilli are virulent. Bacilli, on the other hand, which resemble the pseudo-diphtheria type must be subjected to both cultural and animal experiments before their nature or virulence can be judged.

7. All bacilli which are identical with the virulent Loeffler diphtheria bacillus, morphologically, biologically, and in staining by reagents, should be classed with the diphtheria bacilli, whether they have much, little, or no virulence when tested on guinea-pigs. Bacilli which have entirely lost their virulence rarely, if ever, regain it. They probably are incapable of causing diphtheria, for the twenty-four cases in which they were found by us never developed any lesions, nor were they the original of any case of diphtheria, so far as could be ascertained.

8. The name pseudo-diphtheria bacillus should be regarded as applying to those bacilli found in the throat which, though resembling the diphtheria bacilli in many respects, yet differ constantly in others equally important. These bacilli are rather short, and are more uniform in size and shape than the typical Loeffler bacillus. They stain equally throughout with the alkaline methyl-blue solution, and produce alkali in their growths in bouillon. They are found in about one per cent. of the healthy throats in New York City, and seem to have no connection with diphtheria. They are never virulent.

9. One or more varieties both of streptococci and of other forms of cocci exist in the great majority, and possibly in all, of the healthy throats in New York City. Cultures from the throat in cases of pseudo-diphtheria contain more cocci, especially more streptococci, than those from healthy throats, but otherwise do not seem to differ.

10. The investigations of the Health Department have given striking evidence of the marked difference in mortality between true and pseudo diphtheria, for while it was twenty-seven per cent. in diphtheria, it was under two per cent. in pseudo diphtheria.

11. The combined clinical and bacteriological investigation of over five thousand cases has demonstrated clearly the fact that many of the less characteristic cases of diphtheria and pseudo diphtheria are so similar in appearance, symptoms, and duration, that it is impossible to separate them, except by bacteriological examinations. In the more severe cases, and after the disease has fully developed, cultures are less necessary, although their systematic use is desirable.

12. Persons who have suffered from diphtheria should be kept isolated until cultures prove the bacilli have disappeared from the throat, for not only are the bacilli which persist in the throat virulent, but they are not infrequently the cause of diphtheria in others. Where cultures cannot be made, isolation should be continued for at least three weeks after the disappearance of the membranes, for our experience has shown that it is not unusual for the bacilli to persist that length of time.

13. In pharyngeal cases in which thorough irrigation of the nostrils and throat with 1 to 4,000 bichloride of mercury solution has been practised every few hours, the bacilli have not remained in the throat for as long a time after the complete disappearance of the pseudo-membrane as when no antiseptic has been employed. Other antiseptic and cleansing solutions may be also useful.

14. Inflammation of the mucous membranes due to streptococci, either alone or associated with other cocci, are usually mild in character. These inflammations may be more serious when the lesion is located in the larynx, or when they are complicated by scarlet fever or measles.

15. While the streptococci, and perhaps other forms of cocci, may be considered as the primary etiological factor in pseudo-diphtheria, yet, in the majority of cases at least, certain predisposing factors, such as exposure to cold or other deleterious influences, or the presence of certain infectious diseases, appear to be of great importance in determining the occurrence of the disease.

The streptococci which under these conditions apparently cause the disease are probably those which had for a long time existed in the throat, and not those freshly derived through communication with other cases of pseudo-diphtheria. In a small number of cases, indeed, the histories suggest a direct communication, but the causation may be equally well explained by the supposition that the second case shared with the original one the same predisposing cause.

16. The slight mortality and the usual mildness of the cases of pseudo-diphtheria do not warrant us in enforcing isolation, even if further investigation produce positive proof that this disease is directly communicable.

With the results of these investigations before us we can appreciate the difficulty of exterminating diphtheria from a city like New York. On the one hand, we have cases of diphtheria scattered all through the city, many of which are so mild as to be unrecognized, and on the other hand, we have the crowded tenements with their ignorant and shifting population, where proper isolation of the patient from other members of the family, or of the family from other inmates of the building, is usually impossible unless harsher measures are adopted than

are now customary. With stricter isolation of patients, and intelligent and systematic supervision of the schools and tenements, we can certainly reduce the number of cases of diphtheria in the city, but the total extermination of the disease, under the existing conditions of life here, does not seem probable unless one can acquire new means to combat the disease.

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THE AFFINITY OF GOUT AND RHEUMATISM.

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THE time, no doubt, is rapidly drawing to a close when retention of excess of excrementitious matter will any longer be tolerated during the treatment of diseases in general.

Not a score of years ago the practice in London was, as everybody knows, to lock up the bowels for a fortnight or more during the course of enteric fever, and this mode of treatment was instituted by the very man, viz., Murchison, who enlightened the medical world on the subject of lithæmia, and as his custom in typhoid fever has long since been abandoned, so also has his theory regarding the production of lithæmia been brought into question. The object, however, of this paper is to endeavor to show the close relation which exists between gout and rheumatism. And if the cause of gout is, and has been for some time quite apparent and beyond dispute, viz., uric acid in excess in the system; and if, on the other hand, the cause of rheumatism is still in doubt, may it not be justifiable to draw attention to this close resemblance between these diseases, and, if possible, to explain why their effects are somewhat different.

I well remember the late Dr. Murchison diagnosing a case of severe inflammatory affection of the elbow joint, which was not preceded by a local injury, as a first attack of gout, and his opinion was corroborated by subsequent events. This case, I need hardly say, occurring on one of the larger joints as a primary attack, would probably suggest the conviction to many minds of so-called rheumatic origin. And Garrod says, "It is not uncommon to hear a patient call the disease gout as long as it is confined to the feet, but rheumatism or rheumatic gout when the upper extremities become attacked, although the same condition of the system which causes the one gives rise to the other." One naturally infers that the patient referred to above calls his disease what his physician does, and that a certain amount of doubt is in many cases manifest in regard to its etiology, particularly if the disease be of a chronic character or situated in the muscles; many aches and pains and neuralgias which were formerly designated rheumatic are now held to be lithæmic, and give way under an eliminative mode of treatment. It is, I say, in the chronic forms of rheumatism and gout that one notices the resemblance is the most marked. I think that lumbago, which is considered a form of muscular rheumatism, is always lithæmic in origin, and certainly purgation and diaphoresis have, in my hands, given more satisfactory results than the accepted mode of treatment by acupuncture. Osler says, "persons of a rheumatic or gouty habit are certainly more prone to this affection." Here again we have an uncertainty expressed.

Dr. Beverley Robinson, of New York, has stated that in his hay-fever patients he has frequently noticed a rheumatic habit, while Dr. Bishop, of Chicago, and I have independently proved, at least to our own satisfaction, that the affection is lithæmic in origin. There is, no doubt, in that pronounced form of gout occasioned by an excess of alcohol some characteristic appearances which frequently stamp it as a distinct affection from acute rheumatism, caused, I will state, by a loaded condition of the system due to inactive organs, plus some exciting cause; but in many cases the physician is severely taxed before he arrives at any definite conclusions, possibly because there has been noticed not only an alcoholic habit, but also defective elimination; with exposure. In the one case the attack has been occasioned solely by the effects of an excess of alcohol or its products circulating through the blood. In the other case the supply of alcohol or food may not have been in excess, but due to faulty elimination—the effete products circulate through the blood and give rise to the inflammatory condition known as rheumatism. The hypothesis which I rely upon is, that both gout and rheumatism are due to inefficient elimination; if in the one case the kidneys, bowels, and skin could be made to do excessive duty we would have no gout, and if this same activity could be constantly kept up we would have no rheumatism. If this be tenable I think we are approaching the cause of rheumatism, and may possibly class it with gout under the term "Lithæmia." Now in regard to the results of these affections Garrod says that in all cases of gout you have a diseased condition of the kidneys, and it is well known that one finds a small amount of uric acid and urates in the urine in cases of gout due to this diseased condition, and consequently one naturally expects that this uric acid and urates will make their appearance somewhere, which always occurs frequently, but not always, in the joints; but in the case of rheumatism the kidneys are not diseased, and hence you do not have a deficiency of uric acid and urates in the urine, but an excess, and consequently you would not look for uric acid in the blood or deposits of urates or biurates in the joints or elsewhere, because the kidneys being active and healthy are able in time to carry them off, so that this distinction between gout and rheumatism, in regard to uric acid in the blood, and biurates of soda in the joints, is explained by the condition of the kidneys. I have had many cases of so-called rheumatism which have in after-years developed the usual symptoms of gout, and I explain the fact in this way, that at first the kidneys were active and healthy and afterward became diseased.

Again, youth is the special time for rheumatism, when the kidneys are liable to be healthy. Middle age is the choice time for gout, when these organs are more prone to disease. And in this connection I may say that experience has taught me that there is a transitional stage between healthy and diseased kidneys when chemical and microscopical examinations of the urine is of small practical value.

I have stated that rheumatism is caused by a loaded condition of the system (by this I mean an excess of uric acid and urates), plus an exciting cause, viz., cold and dampness; this exciting cause occasions an explosion, as it were, in this way. That it not only shuts off

all excretion by the skin, but also causes a congested condition of the internal organs which interferes with their eliminative action, particularly that of the liver, and hence you have the system suddenly charged with waste products, so that cold is essentially the exciting cause in producing this congested condition which prevents elimination as is evidenced from the fact that in tropical climates we find no rheumatism. Do you not always find a state of constipation in acute rheumatism, and is not purgation combined with diaphoresis the most satisfactory mode of dealing with this disease? as it is also, in my experience, the most efficient way of cutting short an attack of gout, and it is hardly necessary to say that the large class of dyspeptics which we come across daily are relieved most effectually by purgation; in fact, elimination by the bowels and skin probably relieves more suffering and avoids more acute attacks of illness than all other forms of treatment combined. I have been in the habit for several years of advocating the theory that in order to enjoy good health it is, as a rule, not only necessary that the bowels should be moved daily, but that they should be freely moved daily, and I think that if this principle were urged to a greater extent than it is we would have much less rheumatism and gout, or, as I will take the liberty of saying, a marked diminution in cases of lithæmia in general.

KLEBS-LOEFFLER BACILLUS IN HEALTHY THROATS AND IN MEASLES THROATS.

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As the present belief in this city is that the Klebs-Loeffler bacillus in nose or throat is diagnostic of true diphtheria, and its absence characterizes false diphtheria, and that until the bacilli are absent from the nose or throat, no matter how long after the disappearance of a pseudo-membrane, the case is to be considered as one of true diphtheria, the following account of a series of investigations made at the New York Foundling Hospital, in March of this year, Dr. J. J. Reid attending, may prove of interest:

Seventy-nine cultures in all were made. All cultures were sent to the Board of Health and examined by the inspector of diphtheria, Dr. Park. Of these 79 cultures 51 were made from throats that appeared, clinically speaking, perfectly healthy, while 28 were made from throats of children during or shortly after the eruption of measles. Of the 51 clinically healthy throats 10 were in perfect health and in a nursery entirely free from disease, and 12 were convalescent or surgical cases in hospital, but able to be about, and enjoying in general excellent health. Nineteen were made from throats of children coming to the Out-door Department. In these 51 healthy throats the Klebs-Loeffler bacillus was found in 7 cases, while 1 had suspicious bacilli which in subsequent cultures seemed to be pseudo-diphtheritic bacilli. Only one of these cases has since developed any clinical symptoms of diphtheria, viz., laryngeal diphtheria and stenosis requiring intubation. He recovered, but died of pneumonia one month after stenosis had disappeared.

In the 28 measles throats Klebs-Loeffler bacilli were found in 9 cases, pseudo-diphtheritic bacilli in 3 cases, and suspicious bacilli in 2 more, one of which proved to be genuine Klebs-Loeffler. Of these 10 cases of Klebs-Loeffler bacilli in measles throats none showed any clinical manifestations of diphtheria, while the one showing at first suspicious bacilli, and afterward true Klebs Loeffler, died of broncho-pneumonia, but showed no membrane in air-passages post mortem. The pneumonia was the typical catarrhal pneumonia of measles. Almost all the cultures were made from children of three to four years of age, and were made with the greatest care. In many cases extra cultures were made subsequently for greater certainty. To take up the cases somewhat more in detail: Cases I. to X. were made on one floor of the hospital proper from convalescent children who were allowed to eat at the same little table in an adjoining room and play together. When the reports of Klebs-Loeffler in two of the cases were received, they were promptly isolated and treated.

Case I. (Culture No. 3).—Eugene W——, aged three, suffering from anæmia, well nourished, no cough, called "doll baby" from his perfect face and pettish actions. Soft blowing murmur, generally heard best over pulmonary interspace, which disappeared entirely under treatment until at the time culture was made it could no longer be heard and child seemed perfectly well. Three days after culture was made laryngeal diphtheria developed, and intubation became necessary; tube removed on fifth day, reinserted on sixth day, and finally removed four days later; patient gradually improved, but remained in weakly condition and died of broncho-pneumonia a month after first intubation. Culture of this case proved virulent in guinea pigs.

Case II. (Culture No. 1).—Denny C——, aged four, convalescent from croupous pneumonia for two weeks and playing around with the other children. Throat appeared perfectly normal, culture contained many typical Klebs-Loeffler bacilli, which proved virulent in guinea pigs. No membrane or further manifestations of diphtheria appeared, and a little treatment soon removed bacilli. Has been perfectly well since. An interesting point in connection with these two histories is that three days later No. 4 developed typical diphtheritic patches on both tonsils, and cultures showed abundant Klebs-Loeffler. She recovered nicely under treatment, and culture about a week later showed no Klebs Loeffler, none having been found in her original culture.

Culture No. 2.—Maggie W——, a child suffering from marked rachitis showed two well-marked patches of pseudo-membrane a few days after original cultures; some temperature, enlarged glands, prostration, etc., but no Klebs Loeffler were found in original or two later cultures. Hers was an obstinate case, but she recovered after vigorous treatment. Now here were ten children not having been exposed to diphtheria, in good general condition, with apparently perfectly healthy throats, no enlarged tonsils, nor adenoids, nor nasal catarrh, one of whom developed laryngeal diphtheria, apparently giving diphtheria to another, and infecting one with true and another with false diphtheria.

Culture No. 7, who had suspicious bacilli at first culture, showed pseudo-diphtheritic bacilli, but no further manifestations of diphtheria, and the bacilli disappeared with treatment.

The following cases were in other wards:

Case III.—Stephen ——, aged five, tubercular osteo-arthritis ankle, showed Klebs-Loeffler typical, but no further sign of diphtheria, and treatment begun shortly after isolation. Showed no further bacilli.

Case IV.—Thomas C——, granular conjunctivitis, showed typical Klebs-Loeffler. No further manifestations of diphtheria.

Case V.—Annie W——, talipes equino varus, with special shoe fitted. Klebs-Loeffler found, but no subsequent diphtheria.

The two cases from the Out-patient Department showed true Klebs-Loeffler, but treatment removed bacilli, and no further symptoms appeared.

Of the 28 measles cases, in which cultures were made in all but 6 at time of eruption, typical Klebs-Loeffler were found in 10 cases. Four of these had croupy coughs, but only one of them had Klebs-Loeffler, while one had pseudo-diphtheritic bacilli. None showed any further trouble with the throats, the peculiar cough doubtless being due to a greater degree of catarrhal inflammation of the larynx. Two of these cases died of pneumonia, but no membrane was found post mortem.

From these cases, to sum up, we note:

1. Of 51 healthy throats, Klebs-Loeffler bacilli in 7; that is, 28 healthy throats in hospital, 5 Klebs-Loeffler;

19 healthy throats in Out-patient Department, 2 Klebs-Loeffler. Nearly one in seven is the proportion of Klebs-Loeffler in healthy throats.

2. Probable infection of a case from the Klebs-Loeffler bacilli in a throat in which at time of culture they were doing apparently no harm.

3. Occurrence of severe pseudo-diphtheria in a throat which contained no Klebs-Loeffler.

4. Cases of pseudo-diphtheritic bacilli in healthy throats.

5. The occurrence of Klebs-Loeffler bacilli in 10 out of 28 cases of measles throats, or in about one-third of cases examined, but apparently not adding clinical manifestations of diphtheria at a time when they should have found it easiest, *i.e.*, in inflamed measles throats. The bacilli were removed with much greater difficulty from half of the measles throats, they apparently finding the inflamed mucous membrane a good habitat. As all of these cases were promptly isolated and treated as soon as bacilli were found, no idea of the virulence of the bacilli can be obtained other than the few cultures inoculated in animals. All of these children have been under observation for the past three months, and none of them, save the single case requiring intubation, have since showed any sequelæ or further manifestation of diphtheria.

THE CERVICAL GANGLION OF THE UTERUS.

By BYRON ROBINSON, M.D.,

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It would astonish any student to know how little has been published in regard to the nervous system of the female genitals which is of an original character. The reason for this is at once apparent when one pursues the study for several years. Of course, the simplest and easiest way is to dissect the genitals of man and animals. But few do that. And besides, to dissect with value and discrimination requires time, experience, and patience. The best way is to secure an infant cadaver and drop it in alcohol for several weeks, and for comparison secure some six to eight weeks' fœtal pigs from the slaughter-house and treat them likewise.

To get at the parts most readily, open the infant's abdomen and take away the hip-bone. Unjoint it at the sacro-iliac joint, then cut it away at the tip of the ischial spine, and then saw through the pubic rami at the centre of the obturator foramen. The field is now clear. Next, observe the course of the hypogastric plexus just beneath the peritoneum at the promontory of the sacrum. It will show itself like white threads shining through the peritoneum. The white lines are the hypogastric plexus and should be carefully followed by a sharp-pointed scissors as far as the region of the cervix. Now, with gentle care, clear away the various tissues from the roots of the first, second, third, and fourth sacral nerves. It will, by this time, be clear to the sight that the lower end of the hypogastric plexus and the branches from the sacral nerves (especially the third and fourth) converge near the cervix into a mass of white tissue. This mass of whitish-gray tissue is the ganglion of the cervix uteri. So far as I can ascertain, this ganglion was first described by a physician named Walter. The existence of the ganglion has been denied by Snowbeck, of the English, and by Kilian, of the French. The defenders of the ganglion are chiefly Lee (1842) and Frankenhausen (1867). The names of those who have worked at this ganglion are very few even to this day. The only worker on this ganglion that I know of in the last generation is Dr. Jastrobef, of St. Petersburg, in the clinic of Professor Slavjansky. Dr. Jastrobef used thirty bodies to secure anatomical and pathological knowledge. I have been working at the nervous system of the female genitals for some five years, and I did not become aware of Dr. Jastrobef's labors until August, 1894. Nearly every worker in this subject comes to essentially the same conclusions, but some little manifestations arise which induce said observer to think every other investigator overlooked. Lee and Frankenhauser showed with anatomical positiveness the largeness and solidity of the cervical ganglion; while Snowbeck and Kilian tried to belittle its size, and even its existence. Jastrobet's short account simply sides with the idea that the cervical ganglion is a mere plexus of nerves.

After careful dissecting (man and animals) I must say that the cervical ganglion is a veritable ganglion, just as the superior cervical ganglion is. The cervical ganglion is a real ganglion. It is true it varies in shape and size, as all sympathetic ganglia do. But it is constant and real. I shall carry on this investigation for the next few years in man and animals and prove its constancy. The last cadaver which I dissected for the purpose of identifying the ganglia for study was that of a woman about seventy years old. The ganglion was fully three-fourths of an inch long, and over one-fourth of an inch wide. It was a thick, hard, irregularly shaped mass of nerve-tissue receiving the hypogastric plexuses and the branches of the sacral nerves, and sending out many small nerves to the uterus, bladder, and rectum. The ganglion in this special case received all the branches of the sacral nerves before they entered the uterus, and all the nerves of the hypogastric plexus, except two or three, before they were sent to the uterus. It appears, then, that the cervical ganglion is the distributor of nerves to the uterus. It is no doubt the ganglion of the uterus. Its business is to control the uterus. Leashes of nerves start out of this ganglia to the uterus, bladder, and vagina. The vagina was, next to the uterus, the favored organ for numerous strands. The ganglia lie near the cervix, one on each side. In the above case the right cervical ganglion was much more solid and compact than the left. More than a dozen branches could be counted going to the uterus, to the vagina, and to the rectum, in the order of abundance. In this case of a woman seventy years of age the ganglion was perfect and distinct, as it is in an infant cadaver. The wonderfully intimate nervous connection of the uterus to both rectum and bladder should be a lesson to the gynecologist. The uterus, rectum, and bladder are richly supplied by many strands from the same great trunk (hypogastric plexus). It is almost impossible to irritate one organ without the other two being brought directly into the disturbed field.

During the last five years I have had many subjects (man and animals) to study the sympathetic nervous system, and one fact has, time and time again, impressed me. This fact is the widespread and profoundly intimate nervous connection of the kidney and genitals. So far as the nerve connection is concerned the organs should be written genito-urinary, with a distinct hyphen. The explanation arises in embryology, where both genital and urinary organs arise from the same source—the Wolfian body. I wish to give credit for this same idea to Dr. Frankenhauser, whose work I was able to secure only a few months ago, as it is out of print. A glance at a well-dissected sympathetic nervous system lying *in situ* would enable a physician to cast aside forever an error long propagated in obstetrics, and to my own knowledge taught even to this day from obstetric chairs. It concerns pressure over the sacral promontory to stop post-partum hemorrhage. It is taught that pressure compresses the aorta so that the blood is checked from going to the uterus. A few actual trials in obstructing the aorta by pressure will soon dispel the delusion. The facts in the case are that the irritation of the hypogastric plexus (in attempting to compress the aorta) induces the uterus to contract. The more pressure and vigorous irritation applied to the sacral promontory the more vigorous and certain will be the uterine contractions, so that the explanation of how post-partum hemorrhage is checked by compressing the aorta is certainly wrong. The mechanism is accomplished by the irritation of the hypogastric plexus. So far I have not had the opportunity of dissecting a pregnant uterus, to determine whether the cervical ganglia enlarge, but both Lee and Frankenhauser say

they do. It is probable, however, that John Hunter is correct in his suggestion that it is the connective tissue, and not the nerves themselves, which enlarges in pregnancy. Almost every investigator of the uterine nerves has come to the opinion that it is the infant cadaver which serves the best purpose. The nervous system of the infant is disproportionately large and is plain to the eye, and it can easily be separated from the delicate connective tissue. The cervical ganglia are very plain in the infant. Two to four nerve-branches pass along with the ovarian vein and artery to the ovaries. At the junction of the tube and uterus (*i.e.*, at the origin of the round ligament) the ovarian and uterine nerves join—anastomose. The cervical ganglion, of course, shrink after the menopause, but its shrinkage must be limited, as many of its branches supply the rectum and bladder, organs which persist in further use. Yet it appears to me that the rectum and bladder in old female cadavers are considerably atrophied as well as the uterus.

Jastrobef in his short article notes that in disease of the genitals on one side the ganglion of the same side is affected. He reports two cases where the ganglion and the genitals of the same side were both diseased. As a considerable portion of the cervical ganglia rests on the vagina, even total extirpation of the uterus would include but a very small part of the ganglia, for the cervical ganglia are situated too low down to be included in the extirpated uterus. These few remarks may call attention to the cervical ganglion of the uterus, its limited literature, the varied opinions as to its existence, shape, and size, as well as the slight records of its functions and pathology.

Progress of Medical Science.

The Significance of the Venous Pulse.—Dr. James Mackenzie divides the venous pulse into two forms, the auricular and the ventricular. The former, he says, presents distinct evidence of the functional activity of the right auricle. In this form there is also a wave due to the ventricle, and as it increases the auricular wave decreases and finally disappears, and thus the ventricular venous pulse is developed. The latter form is a more advanced stage than the auricular, and, as during its development there is a gradual fading of the auricular wave, there is a period when such terms do not sufficiently denote the character of the pulse; but the terms are convenient for descriptive purposes. The ventricular venous pulse appears only when there is organic disease of the heart itself (most commonly in valvular disease). When failure of the heart is functional and not due to organic disease of the valves, the auricular pulse persists to the end. Similar types of pulse may be recognized in the liver. Here the pulse appears only when there is organic disease of the heart. In many respects, says Dr. Mackenzie, more information regarding the various cavities of the heart can be obtained from the study of the venous pulse than from that of the arterial pulse. Thus, during a cardiac revolution the arterial pulse is in free communication with but one chamber, the left ventricle, only a portion of the time, whereas in the venous pulse the effects of the right auricle during its systole and its diastole may be observed, while the time of the appearance of the ventricular wave gives information regarding the degree of incompetence of the tricuspid orifice. Information may be gathered regarding the exact time of closure of the pulmonary valves, and the persistence of the ventricle in systole for a short time after the outflow through the arterial orifices has ceased may be noted. There is also distinct evidence of the diastole of the right ventricle in the venous pulse. In heart failure the venous pulse affords information of a kind entirely different from that supplied by other means. Its appearance, increase, decrease, and disappearance may give evidences of changes in the blood-pressure quite inappreciable by any signs given by the arterial pulse. While, as a general rule, an increase of the venous pressure implies a diminution of the arterial pressure, that, nevertheless, is not always the case. Although in some cases the disappearance of the venous pulse is a sign of the restoration of the body to a healthier condition, yet in other cases it may precede a fatal termination. In these last cases there is also a failure of arterial pressure. In pulse irregularities no true knowledge of the action of the different chambers of the heart can be obtained except by the study of the venous pulse, and this study, says the author, throws a new light upon the heart's movements, and reveals a variety of them hitherto unsuspected.—*New York Medical Journal.*

Obliteration of the Superior Vena Cava.—According to the Paris correspondent of *The Lancet*, Dr. Merlin has published the details of a case of plugging of the superior vena cava—a very rare phenomenon; but what constitutes a still greater rarity is the recovery of Dr. Merlin's patient, who has since (a space of four years) remained well. His patient was a man, aged thirty-four, who, after an effort, was affected with a swelling of the face which, spreading to the whole head, rendered it of an enormous size. The cheeks were puffed out, œdematous, the eyes bulging out of the orbits, the lips (especially the lower) double the normal volume, the tongue swollen so that the mouth could hardly contain it, and articulation was difficult. The œdema of the neck was great, the circumference having increased from thirty-nine to fifty-six centimetres. The jugular veins were dilated, and the establishment of collateral circulation was apparent from the presence of varicosities at the base of the neck. The œdema was marked as low down as the base of the thorax, and the patient had attacks of dyspnœa. The voice was cavernous, cough was frequent, and deafness was complete. The upper extremities were much less swollen than the face or trunk. Below the umbilicus there was no œdema. The patient denied having had syphilis. He was, nevertheless, ordered one drachm of potassium iodide *per diem*, with the result that considerable improvement began as early as the second day. The improvement continued progressively, and he was discharged in a month cured. As above mentioned, the recovery has been since (for four years) maintained.

Suprarenal Tumor.—According to the Berlin correspondent of the *Medical Press* Dr. Lazarus showed a preparation before the Gesellschaft taken from a child, aged three and a half, which had been received into hospital in the middle of February. According to the mother's story the disease commenced with pain in the body, which soon began to swell. In the right upper part of the abdomen a firm, hard swelling was found, which was taken for disease of the liver. The lungs, heart, and kidneys appeared to be healthy; the child became feeble and pale, the hæmoglobin of the blood fifty per cent., and at no time in the history of the case was there fever. Repeated punctures from the margin of the ribs to the umbilicus, over the region of the swelling, emitted very little fluid, of which the microscopical examination gave no confirmation of a malignant character. Closer diagnosis revealed a renal tumor. The child rapidly emaciated, while the weight of the body as quickly increased, till, eight days after admission, it died. On section the abdomen was found to be filled with a tumor; the total weight of the child was thirty-seven pounds, the tumor alone twelve pounds, which originated from the left suprarenal body, which was firmly adherent to the cortical surface of the kidney. The small bowel was pressed upward and backward, the stomach and large intestine were crushed into a small space on the right side of the diaphragm. During life no discoloration of the skin was present. Over the surface of the tumor small nodules were found rising in knots, which, on examination, proved to be sarcomatous degeneration. The liver appeared as a sheet of paper enveloping the tumor.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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TYPHUS AND TUBERCULOSIS.

AT a recent congress of hygiene in France, two important subjects received special attention: the spread of contagious diseases, especially typhus and small-pox, by tramps and other vagabonds; and the social as distinguished from the hereditary causes of tubercular consumption, this disease being probably the greatest physical evil known to humanity.

Typhus had been practically absent from Paris for seventy years, until last year, when tramps brought it into a night refuge at Amiens. It soon spread to other institutions and to the soldiers' barracks, in spite of energetic disinfection and segregation. This year it has appeared as virulently as ever, and is tending to become endemic in France. Deschamps read the first paper on the subject of typhus, stating that, unlike most epidemic diseases, this is one which easily attacks persons in perfect health and without physical defect or predisposition, ending mortally with them oftener than with those of weakened or inferior constitutions. The tramp who has not as yet the slightest exterior or visible symptom of typhus may already give it to those with whom he comes in contact or leave it behind him in the night refuge, especially during the ten or twelve days before he finally comes down with the disease. Contagion is ever to be feared when cure seems to be complete. Dronineau spoke of the tendency of typhus to fix itself permanently in a region to which it once gains admittance. It was thought best, however, by others, not to suppress the night refuges, as these combine public safety with public charity. Constructed of brick or stone, with framework and furniture exclusively of iron, such refuges could each morning be thoroughly disinfected and the straw of the floor and beds be burned. In concluding, the association decided to ask the ministers of the interior and of agriculture, that sanitary inspectors, both of men and beasts, might enjoy permanently the powers now granted them only during a period of a declared epidemic. Republican France accepts the duty of sheltering its vagabonds, and should also have the right of preventing the contagion of disease to its citizens.

An interesting feature of the meetings was a paper by Tison on pulmonary tuberculosis, to which he attributes one quarter of the whole number of deaths in Paris and in other large cities everywhere. At once infections and contagious, very difficult to expel when it has once invaded the organism, tuberculosis remains the cause of death that science has least succeeded in mastering. The preventive measures that might be taken by society, correspond to the three great social causes of tuberculosis as distinguished from hereditary predisposition. These are "troglodytism," alcoholism, and excessive labor, three influences most at work between the ages of eighteen and forty-five. Troglodytism is that condition of modern society that lodges human beings in small rooms, insufficiently supplied with pure air and light, similar to the cave dwellings of the prehistoric troglodytes, with advantages on the side of the cave dwellers. They crept into their holes only to sleep or to shelter themselves from storm or attack, spending most of their time hunting and fishing in the open air. The modern cave-dweller spends most of his time in a luxurious hole or apartment house, and but little, comparatively, outside in the open. Alcoholism, as a cause of pulmonary tuberculosis, must not be confounded with drunkenness, which is uncommon in France. By alcoholism, Tison means that light but constant sipping of liquors and brandy, especially before and after meals, which daily comes more and more to prevail among the men and women of France. In nearly all of these drinks there is from fifty to seventy per cent. of pure alcohol; and even when water dilutes them, more alcohol enters the system than can well be borne. Modern chemists find that alcohol does little more than pass through the system without change or assimilation, remaining as a clog to liver or brain when not eliminated. Even when it has disappeared, a morbid condition of the organs by which it is eliminated remains. The forced elimination of alcohol by the lungs is a direct cause of pulmonary tuberculosis. The physiological impoverishment resulting from insufficient nourishment, Tison states with much bitterness, is due largely to the adulteration of important articles of food and drink. In ordinary canned goods there is only a trace of genuine food. Modern legislation allows the counterfeiting of food and drink, and punishes severely the counterfeiting of money. When the public health is considered as important as the public purse, there will be less pulmonary consumption.

A PRIVATE AMBULANCE SERVICE.

IN this city all the ambulance service has been furnished by the public or private hospitals. The city is divided into districts, and connection with the hospitals and police stations is established by telegraph and telephone. The system works well, though at times the service is slow. When a person who is very ill needs some conveyance to his home or a private hospital he has usually to go to some of the large hospitals and hire an ambulance for his purpose. This is expensive, and often slow and annoying. There are, we believe, some specially arranged carriages by which an invalid can be conveyed from the ferry or a train to his destination. Recently an enterprising firm has undertaken to establish a private ambulance service which may be called upon at any hour of the night or day for the convenience of small institutions or physicians in private practice. Already we are informed that some of the private hospitals are using this service, and as its rates are much more reasonable than those of the public ambulances, it seems as though it would supply a demand.

SNAKE-POISON A TOXIC PROTEID.

In *Science Progress* for September, W. Halliburton has a most interesting paper on snake-poison. Not the least strange of the many puzzling facts in connection with the proteids, says the author, is that many of them are poisonous. The proteids are the most important class of chemical substances, forming the most essential of the constituents of a diet, and are the most constant and abundant of the materials obtainable from protoplasm and living structures generally. Yet practically nothing is known of their chemical constitution. The poisonous proteids are not distinguishable by any well-marked or physical properties from the non-poisonous or food proteids. Both animals and vegetables furnish poisonous proteids; notably jequirity seeds and the yellow lupin in the vegetable kingdom, and snake-poison among animals, together with the proteids in the serum of the conger-eel and other fish, and the proteid poisons found in certain spiders. Proteid poisons are also formed during ordinary digestive processes in the human alimentary canal, from the proteids taken as food. Normally animals are protected from this poison by the lining membrane of the alimentary tract, so that no proteose or peptone is found in blood or lymph during the most active periods of digestion. The cells of this membrane possess many remarkable properties, but one of the most important is this power of regenerating albumin from peptone.

Allied to the albumoses of ordinary gastric activity are the similar products produced by bacteria. In some cases poisons produced by the growth of micro-organisms are alkaloidal in nature. In by far the greater number the toxic product is a proteid. There is still another important class of proteid poisons, the nucleo-albumins obtained by suitable methods from most of the cellular organs of the body. Out of all the work necessary to make the foregoing discoveries, the practical recognition of the alexines or protective proteids has been reached. These alexines appear to belong to the nucleo-albumin class also. In small doses they confer immunity on animals to large doses of similar poisons. The long hidden secret of the *modus operandi* of vaccination and other forms of protective inoculation begins at last to be revealed.

The small quantity of poisonous proteid that the snake secretes is atoned for by its quality. One thousandth part of a grain of the Australian black snake's poison invariably kills a rabbit five pounds in weight in about a hundred seconds. And this deadly proteid is as yet undistinguishable by chemical methods from those in daily use as foods!

In the researches on the venom of the Australian black snake, Martin and Smith found it necessary to exclude various classes of poisons, as well as to determine positively the nature of the venom. They excluded in the first place by appropriate experiments the presence of micro-organisms, ferments, alkaloids, ptomaïnes, and crystalline acids. Next they showed that the poison itself was a proteid mixture, containing three distinct proteids, one an albumin, and the other two albumoses. The albumin is not virulent, but the two albumoses (corresponding to proto- and hetero-albumoses of Kühne) are extremely poisonous. They each have the same physiological action, and this is the same as that produced by the venom itself. Momentary boiling of the venom does not impair its activity, but prolonged boiling for days destroys its virulence.

The most marked local effect of serpent proteid poison is œdema. The general symptoms consist of twitching and convulsions in non-lethal doses. Continued fluidity of the blood has been noted by numerous observers in the case of various snake-poisons. Martin found that different doses produced different results; and these results show a great resemblance between the action of the venom and that of tissue-fibrogen and nucleo albumin. Does the poison contain nucleo-albumin, which itself is a proteid united to a substance rich in phosphorus called nuclein? Snake-venom contains no nucleo albumin; and its action not only opens up a novel aspect of the subject of snake-poisoning, but also sheds light on the vexed question of blood coagulation.

GRIEF, EMOTION, AND INFECTION.

Many violent maladies have been supposed to have been produced under the operation of moral influences. Fear has been considered capable of provoking erysipelas. Laënnec believed that griefs and annoyances were important constituents in the frequency of tuberculosis in large cities. Reproaches and agitation have been known to be shortly followed by puerperal infection, in cases that were doing perfectly well up to the untimely interference of parents or relatives. Many observers, according to Fèré, in the *Popular Science Monthly*, for January, attribute an important part in the etiology of the diseases of women in child-bed to moral affections. Theories recently put forth to explain contagion and immunity from infectious disease seem to agree with the facts in the case. One, that mesodermic cells are charged with the protection of the organism, explains why diminutions of circulation and decrease in the calibre of the blood-vessels is necessarily unfavorable to the sally of protective cells and phagocytosis. Asthenic emotions, from this point of view, lead to the same condition as traumatism, fatigue (Charcot, Boyen); chill (Pasteur, Wagner, Platania, Chairin); inanition, (Canalis, Morpurge); loss of blood (Serafini); and nervous sections (Ruffer, Roger, Herman).

That grief prostrates, often causing physical disease and sometimes death, has long been a matter of everyday knowledge. The way in which such effects are brought about has been the subject of careful study by an investigator named Bassi, who has recorded observations on animals which apparently died in consequence of capture. Birds, moles, and a dog, finally succumbed to conditions that correspond in the human animal to acute nostalgia and a "broken heart." These humble cousins of the human race were examined post mortem.

Generally there was hyperæmia, says *The Lancet*, sometimes associated with capillary hemorrhages of the abdominal organs, more especially of the liver, with fatty and granular degeneration of their elements, and sometimes bile was found in the stomach with or without a catarrhal condition. The clinical symptoms were at first those of excitement, especially in the birds, and followed by depression and persistent anorexia. The theory suggested by Dr. Bassi is that the nervous disturbance in-

terferes with the proper nutrition of the tissues in such a way as to give rise to poisonous substances—ptomaïnes—which set up acute degeneration of the parenchymatous elements similar to that which occurs in consequence of the action of certain poisonous substances, as phosphorus, or to that met with in some infectious disease. In support of this view, it may be remembered that Schule earlier found parenchymatous degeneration in persons dead from acute delirium, and that Zenker found hemorrhages into the pancreas in persons who had died suddenly.

MENTAL SEDATIVES.

THOUSANDS of men and women, says the *London Spectator*, use novels as mental sedatives, read them to steady their nerves. Busy brain-workers, or those who otherwise exhaust their nervous energies, want some form of mental sedative. They cannot rest while doing nothing. In order to quiet the thinking machine, it must be kept gently at work. The easier and more mechanical that work is the better, but the mental powers must just be kept running. A douche of fiction quiets them, so novels are poured over the weary in a gentle easy stream. This physical need creates the novel market. To one accustomed to use fiction to soothe his mind, there comes a positive craving for novels, like the craving for any other sedative. Hence the demand for fiction, good or bad, of a kind that does not obtain in other forms of literature. And if the novel is in a foreign language, be it said in passing, the sedative effect is complete.

News of the Week.

The Progress of Medicine in China.—The Viceroy Li Hung Chang has established in Tientsin an imperial medical college, with a staff of western (English) medical men who assist native Chinese in teaching. A four years' graduated course is required and a well-equipped hospital has been built.

Cesario's Body.—Professor Lacassagne applied to have Cesario's body, in order to make a post-mortem examination. Menacing letters, it appears, were sent to the medical faculty, and the body has been buried. Thus probably interesting pathological and physiological data have been lost, and it is shown that the anarchist does not favor scientific any more than he does social progress.

On the Use of Cinnamon and Other "Cures" for Cancer.—Mr. J. W. Hulke writes to *The Lancet* that a regulation of the Middlesex Hospital respecting its in-patient cancer wards requires the surgeons in charge of these to try every alleged remedy the composition of which is not "secret" and for which obviously there are not sufficient grounds for judging that its effect, if any, will be injurious. A letter from Dr. J. Carne Ross having been published in *The Lancet* on the great value of cinnamon in cancer, it was agreed to try the drug in the way recommended. Five cases were chosen as best fulfilling the conditions under which Dr. Ross had obtained the best results. Three were uterine cases, one was rectal, and one was a case of recurrent masses in the neck everywhere covered with sound skin. The preparation used was made by slowly boiling one pound of Ceylon sticks with three pints of water till the bulk was reduced to one pint. Half a pint was drunk daily. Four of the patients were under observation in the hospital the whole time; the fifth patient was treated for part of the time as an out-patient. In four of the cases administration was continued for between two and three weeks, after which the drug became intolerable to the patient and was vomited. The patient in the fifth case continued to take it for a month before he begged to have it changed. In three of the cases there was definite evidence of increase of the growth during the administration. In none was there any evidence of relief of the pain, and in no case was it possible to diminish the dose of morphia or opium, but rather this had to be increased with the increase of the growth or as the drug lost its power from custom. Mr. Hulke adds: "It has fallen to me to make trial of various remedial measures, suggested here and abroad for the relief and cure of sufferers from cancer, in the course of some twenty-five years or thereabouts. Of such "pharmaka" I may mention "Fells' paste" (the active ingredient in which is zinc chloride colored with red snakeroot), slow injection of acetic acid through a capillary tube, sundry escharotic pastes and powders having arsenic as their essential component, condurango, and more recently Chian turpentine; also besides these the dietetic treatment laid down by Beneke, without and with the association of arsenic administered internally recommended by Esmarch. Several years ago the conjecture that cancer might have a parasitic origin induced me to try cinnamon, being influenced in the selection of this by the common ascription of germicidal properties to aromatic oils, and by my recollection that my old teacher, Dr. A. Farre, held strongly that cinnamon had something like a specific or particular influence over some uterine functions, a belief which led him to prescribe large doses of the tincture in certain cases of dysmenorrhœa. I gave cinnamon a long trial, chiefly in cases of cancer of the uterus, but also in that of other organs. The result was wholly negative.

The Craig Epileptic Colony.—Dr. Frederick Peterson, President of the Board of Managers of Craig Colony, writes that our informant was in error in the statement, recently published in these columns, that the epileptic colony would not be opened under two or three years. The colony will be opened for actual work, he says, next spring. "There are six hundred patients eagerly waiting in the almshouses of the State to patronize the colony; besides which the managers are receiving daily letters from numberless unfortunates, not in almshouses, anxious to enter the colony as soon as they can be received."

Dr. George W. Davis, of Holyoke, Mass., died in that city, on September 18th. He was born on March 26, 1847, and was graduated in medicine from the Vermont University in 1868. He began practice in Craftsbury, Vt., but removed to Holyoke in 1871 where he resided continuously up to the time of his death. The cause of his death was disease of the heart following an attack of influenza in 1892.

A New Charity has been organized at Brooklyn, known as the Non-Sectarian Hospital and Home for Epileptics, having accommodations for forty inmates.

The New York State Association of Railway Surgeons.—The annual meeting of this Association will be held at the Academy of Medicine, in this city, on November 15th next. All railway surgeons of the State are invited to be present. The Secretary of the Association is Dr. J. B. Hulett, of Middletown, N. Y.

The Southern Surgical and Gynecological Association.—The Seventh Annual Session of this Association will be held in Charleston, S. C., on November 13th, 14th, and 15th. Papers will be presented by a number of the leading surgeons and gynecologists of the South. The medical profession is cordially invited to attend. The President of the Association is Dr. Cornelius Kollock, of Cheraw, S. C.

Dr. Albert H. Buck, of No. 14 East 45th Street, New York, writes: "On page 810 of the MEDICAL RECORD (issue of June 30, 1894), I speak of Dr. Frederic Lange, the distinguished surgeon of this city, as Dr. Theodore Lange. You will do me a favor if you will insert a suitable correction of this error in one of the next issues of the MEDICAL RECORD.

The Malarial Organism in the Blood Plaque.—Dr. George J. Preston, of Baltimore, writes: "In examining the blood of a considerable number of malarial cases this summer, I observed quite frequently a speck of pigment in the blood plaques. Careful observation showed beyond any doubt that this pigment possessed motile properties. Generally there was but one clump of pigment, occasionally two or three granules. At first the single granule was mistaken for a nucleus, but it was soon noted that the supposed nucleus moved from one part of the plaque to another. The movement is not the rapid zigzag motion of the free malarial organism, but a much slower motion. The pigment can be seen to slowly change its place in the plaque, now in the centre, now at the periphery. In patients taking methyl blue the pigment was slightly stained. The organism was observed most frequently in the blood of patients taken during the chill or a few hours before or after the paroxysm. It was seen, however, sometimes in the interparoxysmal period. The physiology of the blood plaque is still so uncertain that this note is recorded in the hope that further observation may confirm the presence of the malarial organism in this structure."

The American Medical Publisher's Association.—The first annual meeting occurred at Hot Springs, Va., on August 13th and 14th. After the transaction of the usual routine business, the president, Dr. Landon B. Edwards, read a paper on "Advertising and Advertising Agencies." Upon motion, it was decided that all annual meetings hereafter should be held just prior to the sessions of the American Medical Association, the next meeting being set for Monday, June 5, 1895, at 9 A.M., in the Utah House, Baltimore.

Dr. Charles H. Dare, of Bridgeton, N. J., died on August 25th. He was for seventeen years County Physician, and was Surgeon of the Fourth New Jersey National Guard.

A Worm Specialist on Third Avenue advertises to remove the worm, head and all, in two hours. This hardly gives tænia solaris, which is naturally a slow animal, a fair show.

Dr. Jacob Newkirk, of Binghamton, N. Y., died August 13th, aged eighty-nine.

Dr. Charles H. Williamson, formerly a surgeon in the United States Navy, died at St. John's Hospital, Brooklyn, N. Y., in the sixty-ninth year of his age. He was a native of Portsmouth, Va., and a graduate in medicine from the University of Pennsylvania.

Railway Accidents.—From the advance sheets of the Statistics of Railways in the United States prepared by the Interstate Commerce Commission for the year ending June 30, 1893, the following statistics are prepared and published in the *Railway Surgeon*.

COMPARATIVE SUMMARY OF RAILWAY ACCIDENTS FOR THE YEARS ENDING JUNE 30, 1893, 1892, 1891, 1890, 1889, AND 1888:

YEAR.	EMPLOYEES.		PASSENGERS.		OTHER PERSONS.		TOTAL.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1893..	2,727	31,729	299	3,229	4,320	5,435	7,346	40,393
1892...	2,554	28,267	376	3,227	4,217	5,158	7,147	36,652
1891...	2,660	25,140	293	2,972	4,076	4,769	7,029	33,881
1890...	2,451	22,396	286	2,425	5,598	4,206	6,335	29,027
1889...	1,972	20,028	310	2,146	3,541	4,135	5,823	26,309
1888...	2,070	20,148	315	2,138	2,897	3,632	5,282	25,888

A Hopeful Candidate.—A late applicant before the Texas Examining Board was asked: "What is histology?" "Histology is the history of medicine."

"What system of medicine do you practise?" "The Vanderbilt and St. Louis systems, and sometimes the homeopath system."

"What is the homeopath system, as you call it?" "Sweatin' the patient."

The Abuse of the Reprint.—It is a courteous and commendable custom for an author who has written an article of real value to send reprints thereof to libraries for reference, to his friends for preservation, and to those pursuing the same line of investigation, who might not otherwise become so soon acquainted with his researches. When, however, the reprint is used merely to advertise the fact that the writer is peculiarly skilful in a certain specialty it is less commendable; and when it is used to advertise Messrs. Enterprise & Paywell's Panacea, or some similar substance, it becomes anything but commendable. These thoughts are suggested by the receipt of a pamphlet, reprinted from a journal published in a neighboring city, and bearing the title "Functional ———," by X. Y. Z., M.D., Professor of ——— in the ———, etc., which publication, although ostensibly coming to us from the author, is quite evidently circulated as an advertisement by, and at the expense of, the firm whose "trade-mark" product is therein recommended (no doubt honestly) as a sovereign remedy for the affection in question. Apart from all questions of propriety, men who permit their names thus to be misused are very shortsighted. Their advice, however unjustly, comes to be looked upon with suspicion, as not wholly scientific and disinterested; and their reputation becomes upon a par with that of the "advance-agents" of theatrical notorieties—an honorable reputation when one does not pretend to be other than an advance-agent. The advertising-reprint and the reading-notice are twin growths of the same poisonous root, and should be utterly condemned by thinking, self respecting physicians.—*Medical News.*

Clinical Department.

SECONDARY SUTURE OF THE SCIATIC NERVE.

By LEONARD FREEMAN, M.D.,

PATHOLOGIST CINCINNATI HOSPITAL; SURGEON TO CHRIST'S HOSPITAL, CINCINNATI, O.

On July 19, 1889, a colored boy, aged nineteen, was brought to the Cincinnati Hospital suffering from a cut across the left thigh. The incision, which reached to the bone, began about two inches below the trochanter major and extended backward and downward for a distance of about five inches. The wound soon healed, but, according to the history of the case, sensation remained absent in the foot and the limb could not be used freely.

On August 15, 1891, he again entered the hospital, about twenty-five months after the original injury. Paralysis and atrophy of the muscles of the leg and foot were present, with some atrophy of the thigh. Sensation was absent on the entire outer side of the leg and on the sole and dorsum of the foot, except in a line about one and one-half inch broad along its upper and inner aspect. The anæsthetic area was dry and covered with a scaly, whitish epithelium, and was separated in a beautifully distinct manner from the adjacent soft, dark, and moist skin. There was œdema of the foot, and the nails of two or three toes were missing. A large, deep, trophic ulcer occupied the under surface of the heel.

It was difficult to make the man understand that there could be any connection between the injury to his thigh above and the trouble in the foot below; he suspected that we wished to "experiment" on him. Finally he consented to an operation, and about twenty-seven months after its division the sciatic nerve was reunited with sutures.

A longitudinal incision six inches in length was made, with the line of the old cicatrix as a centre. The inferior segment of the nerve, owing partially to its atrophy, was found with some difficulty. The superior segment revealed itself at once by the spindle-shaped bulbous enlargement, the size of an English walnut, which occupied its extremity. This was removed by a wedge-shaped incision with its apex well within the normal nerve above. Below the old injury the nerve was much atrophied, its fibres spreading out and losing themselves in the cicatrix. These stringy fibres were separated as thoroughly as possible from the surrounding tissues, and the end of the nerve resected. The distal and proximal nerve-sections were then repeatedly and forcibly stretched with as much force as was considered safe, in order to bring them closer together.

On flexing the knee and extending the hip it was possible to approximate the ends of the divided nerve, the separation between which had at first been at least four inches. Cat-gut sutures were employed, some being tied to portions of the neurilemma and others introduced through the body of the nerve itself, the end of the distal segment being dove-tailed into the V-shaped incision in the end of the proximal segment.

The operation and subsequent dressings being conducted with aseptic and antiseptic precautions, the wound healed by first intention, the knee being retained in flexion and the hip in extension by plaster of Paris.

On the third day following the operation, wishing to demonstrate the absence of sensation in my patient's leg, I suddenly stuck a pin into the part. The result was startling; the man gave a yell, and raised very pointed objections to a repetition of the experiment. This was the first intimation which we obtained of returning sensation.

On the eighth day, quoting from the history, "sensation is greatly increased," and "the scaly appearance of the skin over the entire leg is disappearing, and the cuticle approaching more nearly its normal condition. The ulcer on the foot is healing steadily."

In two weeks, during which time sensation gradually returned to the leg, the plaster splint was removed and the patient instructed to straighten his limb slowly and carefully, a little each day. On the outer surface of the foot, and more especially about the little toe, the power of feeling remained markedly deficient.

In seventeen or eighteen days the history reads, "sensation is gradually passing to the foot, and now deep prickings with a pin can be felt in the little toe." In about three weeks the patient was walking about on crutches. In a month from the date of the operation the skin of the leg had recovered its softness and smoothness, and had almost returned to the normal, while the ulcer was nearly healed. Sensation having become even abnormally acute in places.

At the end of about five weeks the patient insisted on leaving the hospital. He could walk well without the use of crutch or cane, the ulcer was healed, and the skin of the leg nearly normal. There was some sensation in the foot, although very deficient on the outer border, but sensation in the leg was nearly what it should be. The muscular paralysis, however, had improved little if any.

In July, 1892, nearly a year after the operation, the patient was again in the hospital. The ulcer on the foot was present, although, as near as could be ascertained, it had healed and broken out several times. Unfortunately nothing was mentioned in the history as to sensation or motion in the foot.

On May 24, 1894, the patient was again examined. The leg above the ankle was perfectly normal; the skin being soft and moist and the sensation perfect. The foot, however, was in bad condition—a large and deep ulcer occupied the posterior surface, while another smaller ulcer had appeared on the outer edge of the foot near the little toe. In fact, the condition of the foot was such that amputation was resorted to in order to rid the patient of his incumbrance.

After a careful search of all the literature at my disposal, I have been able to find but three other cases of secondary suture of the sciatic nerve—although there have probably been others—one by Welhouse and one by Langenbeck, in 1876, and one by Weir, in 1882. Wyeth, although he did not suture the sciatic itself, reunited to that nerve the severed internal and external popliteals.

Langenbeck's operation was made two and a half years after the injury to the nerve; and, similarly to my own, was followed by a return of sensation on the third day. The patient, a man, aged nineteen, had motor paralysis in the leg and foot, together with anæsthesia of the area supplied by the sciatic. A large, deep ulcer existed near the base of the fifth metatarsal bone. The operation-wound healed by second intention. The ulcer filled up rapidly, and sensation returned steadily to the parts, some portion even becoming hyperæsthetic.

At the end of a year the patient was again seen. Motor paralysis was still as complete as before the operation. Considerable of the sensation which had been gained was found to have again disappeared, although a certain amount of improvement remained, and the ulcer had not broken down.

In Wyeth's case the popliteal nerves were sutured to the sciatic ten weeks after the injury. Sensation began to return in five days, and was almost fully restored at the end of twenty-two days. The ulcers which had appeared on the foot healed rapidly. After two months, sensation still existed in the part, accompanied by considerable pain. The subsequent history is not given.

In Welhouse's case complete paralysis of the sciatic followed an injury to the left thigh just below the gluteal mass. He operated nine months after the injury, the wound healing in two or three weeks. The first few signs of returning sensation and motion did not occur for three months, and it required two years for the leg to

regain its original usefulness. At the end of that time only a slight œdema and a subnormal temperature remained of the original disturbance.

Weir sutured the sciatic nine years after its division. There was no gain in motility, but some in sensation, and great improvement in the trophic changes, which had progressed to ulceration.

It strikes one in this connection that too much stress should not be laid on the healing of ulcers, because confinement to bed after an operation must have a tendency in itself to produce improvement.

Considering the history of my own case and that of Langenbeck, it seems reasonable to suppose that the ultimate disappearance of sensation which had reappeared following the operation might have been due to pressure on the nerve from cicatricial contraction. This view is strengthened by a case reported by Tillaux, in which suture of the median was followed by restoration of function which subsequently disappeared. A second operation revealed a cicatricial mass pressing on the nerve, the removal of which rapidly restored the lost functions. Pye describes a similar case. I have myself seen in a case operated upon by Dr. Dandridge the removal of a cicatricial band, which pressed upon a nerve, greatly benefit the motor and sensory disturbances which had resulted.

Where there is much danger of such cicatricial contraction, might it not be practicable, at least in regard to the deep-seated sciatic, to conduct the sutured nerve over the dangerous region through a suitable aluminum or other light, non absorbable, non-compressible cylinder? Aseptic bodies, such as drainage-tubes, bullets, gauze, wire, etc., heal into the tissues without any difficulty or irritation, even splinters of wood sometimes do this, and there seems to be no reason why an aluminum cylinder should not do the same. In addition, Gluck asserts that nerves regenerate more rapidly over long distances when their severed ends are connected by a bone drainage-tube. Vaulair mentions a case in which a regeneration of two inches was thus obtained after a lapse of four months, the new nerve-substance originating by a process of proliferation from the end of the proximal segment alone.

The suturing of nerves, although rather a recent surgical procedure, has been done a great number of times, especially in connection with the median and ulnar; and the results, particularly if the operation is undertaken at the time of the injury, or soon afterwards, are generally excellent. But in cases where weeks, months, or even years have elapsed the chances of success are not so good. Successful cases have been recorded, however, after a great lapse of time. Jessup, for instance, operated on the median nerve nine years after it had been divided, and succeeded in obtaining restoration of function.

F. J. Hodges has collected 108 cases of secondary nerve-suturing, including Brun's 33 cases, with eighty-eight per cent. of successes. This percentage is probably too high. There are a number of reasons why it is easy to be mistaken in the assumption that reunion of a divided nerve has taken place. It must be remembered that there is such a thing as anastomosis of nerves as well as of arteries, and that these anastomotic filaments may take on the sensory functions of the injured nerve. The areas of innervation of nerves also at times overlap each other to a greater or lesser extent, so that sensation is only slightly or temporarily interrupted by division of a nerve-trunk. It has been asserted by Brown-Séquard that irritation of the proximal end of a divided nerve, such as would result from an operation, would so stimulate the spinal centres that a reflex and heightened sensibility would be communicated to alien filaments going to the anæsthetic area, leading the operator to think that the nerve operated upon had been reunited.

It is of course possible that something of this sort may have taken place in either of the cases described above. In such a process as that just mentioned motion is not apt to return to any marked extent, even though the restoration of sensation be complete. As regards motion, deception is easy. Patients become, in the course of time, quite expert in overcoming the loss of power in a set of muscles, by the use of others. Also the natural elasticity of the tissues, especially when aided by contractures, may cause movements which seem as if produced by nerve action. For instance, if the flexors of the hand are paralyzed, the opposing muscles will extend the fingers, which may partially flex themselves again simply from elastic contraction of the muscles and tendons. A reliable sign of nerve regeneration is probably the return of the faradic excitability of the muscles.

It is a common thing for sensation to return first, followed after a time by motion. Motion may not appear at all, or only after the lapse of weeks, months, or even years, and then it may be but partial. The case may improve for a time, and then grow progressively worse; which may be due occasionally, as I have stated, to cicatricial contraction. Absolute failure cannot be declared, however, until two or three years have elapsed.

It is truly astonishing how soon sensation will sometimes reappear. Tillaux states that following suture of the median four years after its division all the functions of the nerve reappeared in three hours; and we read of cases of immediate suture in which recovery of function took place within fifteen minutes, or even as soon as the nerve ends were approximated (Segond).

Catgut is probably the best material to employ, although silk and even silver wire have been used. The suture may pass directly through the substance of the nerve, in which case, for obvious reasons, a Hagadorn needle is better than one with sharp edges; or they may include only the neurolemma. In the latter method a small portion of the sheath may advantageously be caught in a knot on either side, so as to prevent tearing out of the thread. Or both these methods may be employed in conjunction, which seems to be ordinarily preferable, as it permits of accurate adjustment of the divided surfaces, and at the same time gives considerable strength to the union.

In case the ends of the divided nerve have contracted too far to be easily brought together, one of several expedients may be adopted: Gluck has suggested that the extremities of the segments be connected by a section of decalcified bone drainage-tube, in order that the nerve may regenerate along its lumen. By use of this procedure Vaulair succeeded in obtaining a regeneration of two inches after four months.

Experiments have been carried out on animals which show that sections of nerves may be grafted from one animal to another, and probably from animals to man. Nerves have occasionally been successfully spliced—a flap turned down from one segment being joined to a flap from the opposing segment, similarly to the way in which tendons are spliced.

The distal portion of a divided nerve may also be grafted into the side of an adjacent nerve, or onto the proximal end of a second nerve if it be likewise divided. Good results have been thus obtained. Again, both the proximal and distal ends may be grafted onto another nerve at different levels, so as to use the latter as a conducting medium for a short distance. Billroth resected a portion of the humerus in order to bring the ends of the divided nerve closer together.

Explosive Power of Modern Bullets.—Dr. Du Bois Reymond has been making experiments to record the effect of the modern German rifle-bullet, and finds it very destructive. The bullet of the old style rifle, he says, bored only a comparatively small hole through the portions of the body through which it passed, whereas the new bullet has an astonishing explosive effect. If, for instance, the ball passes through the head of the corpse, the skull is burst asunder in all directions, and very little of the head remains. The speed of the bullet is so great that when it meets an obstacle it explodes like a Prince Rupert's drop and destroys all the tissues around it.

TUBERCULOSIS OF THE LARYNX AND PHARYNX.[1]

By FRED. S. CROSSFIELD, M.D.,

HARTFORD, CT.

I DO not propose in the present paper to bring forward new ideas respecting the theory or treatment of this form of laryngeal disease. My purpose is rather to state my experience with it, and to outline the course of treatment I have adopted, and the results that have followed.

I have selected two cases entirely unlike in their general features, and I shall give the histories of these cases in detail.

The first case is that of a young woman, aged twenty-three, American, unmarried, of slight build, employed in a silk mill. She was brought up amid the most favorable hygienic surroundings, and her health had always been good. There was nothing unfavorable in the family history. Her father, mother, brother, and two sisters were living, and in good health.

She came to me with the following history: In the month of May, 1886, at the age of eighteen, she was injured by a runaway horse. She was thrown some distance, striking upon the side of her head; the injury caused concussion of the brain and meningitis followed. This sickness lasted three months, at the end of which time, having regained her health, she went back to her work in the mill. About three months afterward she took a severe cold, and from that time her health failed. Aside from a sense of continued fatigue, she complained only of her throat, where she felt a constant burning irritation with a desire to cough, but no expectoration. Deglutition produced but slight discomfort. Her throat was not examined at this time. Her physician told her she was overworked and run down, and advised her to go to Vermont for a change. She deferred the trip, however, until June of the following year, 1887. Meanwhile the discomfort in the throat increased, dysphagia being added. She remained in Vermont thirteen months. Soon after her arrival improvement began, and it continued during her stay. Her weight increased from 88 pounds to 108½ pounds. The throat difficulty entirely disappeared, and she says she felt perfectly well.

Three months after returning to her home she resumed her position in the mill and worked steadily until June, 1891—three years. At this time there was a recurrence of the throat trouble.

I first saw her in October of the same year. Up to this time there had never been an examination of the throat, nor had she received any local treatment. Her condition was as follows: Pale, emaciated, easily fatigued, no appetite, slight rise in temperature in the latter part of the day. Deglutition was painful and a troublesome cough interfered with sleep and with the taking of proper nourishment; the expectoration at this time was muco-purulent. The voice was husky and at times lost. The lungs were repeatedly examined, but were always found free from disease.

On examination the pharynx was found to be reddened and covered over the entire surface with a thick, tenacious, ropy mucus, streaked with blood. This mucus being wiped away, several small ulcerations were noticed upon the posterior wall, hardly deeper than the mucous membrane. The larynx presented the same appearance but without ulceration. The epiglottis and vocal cords were reddened and slightly œdematous.

The patient was placed upon a nutritious diet, and cod-liver oil, iron, and wine were administered. The local treatment consisted of thoroughly cleansing the surface, and afterward applying lactic acid, twenty-five per cent. every second day.

In three weeks the ulcerations had healed, the parts had assumed their natural color, and what little œdema there was had disappeared. The voice regained its normal quality, and the appetite and strength returned. The secretions from the pharynx and larynx were examined microscopically, but no tubercle bacilli were found. I therefore considered the condition one of simple catarrhal ulceration. The existence of syphilitic taint was considered highly improbable, as the local conditions were wholly unlike those found in syphilitic lesions of the larynx. Furthermore, the social position of the family would not warrant any such supposition.

I did not see this patient again until four months later, in February, 1892. The old trouble had apparently reappeared with increased intensity. She was pale and had grown rapidly weak and emaciated. She had night-sweats, and coughed constantly, the expectoration being tenacious mucus. The voice was now entirely lost. The pain in swallowing was severe, and her sleep much disturbed. In fact, the general condition was discouraging in the extreme. The pharynx was one mass of ulceration, from a point a little below the uvula down and into the larynx. The ulceration was shallow—but little below the surface—and covered with a grayish, tenacious mucus. The epiglottis was enlarged by infiltration to twice its normal size, and ulcerated nearly its whole length. The arytenoids were also infiltrated and ulcerated. An imperfect view only could be had of the vocal cords. Though œdematous, I do not think they were ulcerated. The entire surface of pharynx and larynx had a peculiarly blanched and sodden appearance.

The lungs were examined carefully at different times, always with the same negative results; but microscopical examination of the secretion from the pharynx now showed unmistakable signs of tuberculosis. Cod liver oil and iron were administered as before, and inhalations of oxygen were given frequently. The surfaces were thoroughly cleansed, and the ulcerations were curetted after applying a ten per cent. solution of cocaine. Lactic acid, fifty per cent., at first, and afterward undiluted, was rubbed into the surface. Several applications were required. Improvement began right away. The ulcers healed rapidly, so that at the end of six weeks healthy cicatrices marked their former location. The œdema gradually subsided and the membrane throughout resumed its normal condition and function. At the same time her general health improved.

It is now a year since cicatrization was completed, and she continues well and says she is stronger than she has been for several years. I have recently examined the throat, and could find no evidence of there having been such wide-spread destruction. I hope to be able to report favorably upon this case at some future time.

It was to me an extremely interesting case, both because the whole progress was unusual, and because it was a case of primary tuberculosis of the larynx and pharynx of extreme severity, and demonstrated what can be done, even in what would seem to be a hopeless case, toward alleviating the distress, if not absolutely producing a cure.

The second case that I shall describe was that of a printer, twenty-seven years of age, American, married. His father, brother, and one sister died of consumption, and he had had general tuberculosis himself for a year and a half previous to his coming under my care, in November, 1889, and at that time he had also been suffering for three months with throat complications.

I saw the patient at his home, he being too weak to come to my office. I found him pale, emaciated, very weak, and able to sit up only a few moments at a time. The cough was constant and painful; respirations, 40; pulse, 120; temperature, 102½° F.; voice entirely lost; dysphagia marked. The pain on swallowing was so severe that he could take no nourishment, nor even swallow the secretions from the mouth. The pharynx and larynx on inspection presented the characteristic pale, sodden appearance, and large superficial ulcers were found upon the posterior wall of the pharynx and upon the soft palate. Infiltration was everywhere present. The larynx was

[1] Read in the Section of Laryngology, New York Academy of Medicine, May 24, 1893.

œdematous and ulcerated. The epiglottis was nearly covered with ulcerations, and was so much enlarged by infiltration that no satisfactory view of the larynx and vocal cords could be had. A rhinoscopic examination showed a large ulcer upon the posterior wall of the pharynx on a level with the Eustachian orifices, and ulcers were also found upon the septum, and on the middle and inferior turbinated bodies on both sides.

Several small nodules were also seen upon both sides of the septum, but none upon the outer walls of the nose.

The prostration of the patient was so great that I did not dare to resort at once to curettement, indeed I had grave doubts that such treatment would be warranted at all. A five per cent. solution of cocaine was sprayed into the nasal cavities, pharynx, and larynx every three hours for four days, and whiskey and oxygen were administered freely. On the fifth day there was an evident improvement in his general condition, and he had taken considerable nourishment. I then ventured, after applying a ten per cent. solution of cocaine, to curette the pharynx, afterward rubbing well into the surface undiluted lactic acid. Later the ulcerations in the nasal cavities and the larynx were similarly treated. Though this procedure is usually very painful, it was not especially so in this case. Improvement began immediately, and the patient said he felt much relieved. Cicatrization was everywhere apparent, and nourishment was taken in sufficient amount, without difficulty, and with relish. He slept well and awoke refreshed. He increased in strength and was able to be up and about the house most of the day. Within four weeks the ulcerations had all healed, and the epiglottis had nearly resumed its usual size. The vocal chords were slightly œdematous, however, and the voice remained husky.

The patient gradually failed, and died from general tuberculosis five months after local treatment was begun. There was no return of the discomfort in the throat, and an examination of the throat and nose a week before death showed the membrane very free from ulceration, but in a pale, slightly œdematous condition throughout.

This case presents one especially interesting feature—the appearance of ulcers and nodules within the nasal cavities. I have never seen this condition before.

Bosworth, in his work on "Diseases of the Nose and Throat," vol. i., states that twenty-seven cases with this complication are reported in medical literature, and these, from lack of positive evidence, he reduces to twenty.

There can be no doubt regarding my second case, because abundant evidence of tuberculosis was found microscopically.

This case also demonstrates the efficacy of curettement and lactic acid, even in hopeless cases of general tuberculosis with laryngeal complication, in relieving the distress referable to the throat, and giving comparative comfort to the sufferer during the few remaining weeks of his life.

It has been said that it is only by looking backward that we can wisely look forward. It is certainly interesting to note the progress which has been made during the past few years in the theory and treatment of this disease. Some of the older writers make no mention of the tubercular form of laryngitis as a primary disease. Quoting from an article written upon this subject in 1883, it says, "Primary laryngeal tuberculosis may possibly occur, but the few claimed cases of its occurrence are at least open to doubt as to correctness in diagnosis." Another writer says: "Neither the catarrh nor the ulceration of phthisical subjects present any characteristic signs by which they could be recognized as such." Heinze, writing in 1879, states that of 1,226 deaths from phthisis 51.3 per cent. had laryngeal ulcerations. He also says that ulcerations were never found with tuberculosis of other organs when the lungs were intact.

The microscope and the demonstration of a specific bacillus make the diagnosis much less obscure. The advancement along these lines, and the knowledge derived from experimental investigation, now place these cases in the list of remediable diseases.

February 1, 1894.—The patient in the first case reported is still in good health, with no indications of a return of the laryngeal trouble.

THE RELATIONSHIP BETWEEN BOVINE AND HUMAN TUBERCULOSIS, WITH THE REPORT OF A CASE.

By W. H. SHERMAN, M.D.,

ATTENDING SURGEON TO ST. JOHN'S RIVERSIDE HOSPITAL, YONKERS, N. Y.

Veterinary Report,

By J. S. LAMKIN, D.V.S.,

YONKERS, N. Y.

GRADUATE OF AMERICAN VETERINARY COLLEGE.

The following case deserves, in my opinion, to go on record as a contribution to the important subject of the etiological relationship between human and bovine tuberculosis. The brief history herewith given is sufficient to thoroughly establish the diagnosis, and the veterinary report, in connection with that of the pathologist, would seem to indicate that the disease of the cattle bore a causative relationship to that of the young patient.

B. H——, male, aged four. Well nourished and of average size. Maternal grandfather died of phthisis some years ago. Mother died as the result of an accident. Family history otherwise entirely negative. His nurse had, about a year previously, attended her daughter who died of consumption. She did not contract the disease, however, nor did any of the servants in the house have tuberculosis in any form. The boy's previous history is good. He has slight adenoid vegetations in the vault of the pharynx, which render him prone to attacks of bronchitis. Two years ago he had a mild attack of pneumonia, and one year ago a second attack; from both of these he recovered entirely, and for one year has had no cough nor illness of any kind. His development has been good, and his growth and dentition normal. His uncooked food has all been raised on the place, and it is believed that he has never eaten raw fruit from market until thoroughly peeled.

I was called to see him on February 21, 1894, as it was observed that he walked with a spastic gait, on his toes, and that he would frequently tumble. From this time on he gradually but progressively developed the classical symptoms of meningitis, namely, spastic contraction, thickness in speech, difficulty in deglutition, loss of power to protrude the tongue, lack of co-ordination, opisthotonos, etc. On March 5th Dr. M. Allen Starr, Professor of Neurology at the College of Physicians and Surgeons, New York City, saw him in consultation, and confirmed the diagnosis of meningitis, probably tubercular.

Treatment.—Iodides and bromides. In spite of treatment the disease progressed in the usual way until death occurred on March 27th. No autopsy was allowed. During the latter part of the boy's illness, having some suspicion in regard to his milk supply, I requested Dr. J. S. Lamkin, Veterinary Surgeon, to inspect and examine the cows on the place, with the result as shown in his report hereto appended.

Veterinary Report.

On March 22, 1894, I was requested by Dr. W. H. Sherman to visit and examine three cows, which were stabled on the place of Mr. B——, Yonkers, N. Y., with a view of determining whether they were the subjects of tuberculosis. Two of these animals were the property of Mr. B——, and the third was owned by his son-in-law. The mixed milk was consumed by all the members of the household, including B. H——, a boy four years of age, who was at this time suffering from tubercular meningitis. A short time previous to my first visit the cows had been examined by a local veterinarian who gave them a "clean bill of health." The attending

physician, Dr. Sherman, being dissatisfied with this examination, as by physical examination alone it is sometimes impossible to detect tuberculosis in cattle, asked me to see the animals and express my opinion as to the presence or absence of tuberculosis.

Inspection showed that they were thoroughly well-housed, well cared for, and well-nourished.

Physical examination failed to disclose anything which could lead to any suspicion that they were other than perfectly healthy, except an enlargement and thickening of one section of the udder of one cow (No. 3). None of them were (or had been) suffering from cough, dyspnœa, or respiratory disturbances of any kind. After a consultation with the family and the attending physician it was decided to employ the tuberculin test, the writer being thoroughly impressed with its value as a diagnostic agent. Accordingly, on March 23d, the temperatures of the three animals were taken at 8.30 and 10.30 P.M. At 11 P.M., in each case, 2½ c.c. of a ten per cent. solution of tuberculin in one per cent. solution of carbolic acid was injected hypodermatically after the hair over the shoulder had been removed and the hide rendered aseptic.

The following morning (March 24th) at 6 A.M. the temperatures were again taken, and every three hours thereafter until 9 P.M.

The following table shows the results obtained:

	March 23, 8.30 P.M. Before injection.	March 23, 11 P.M.	March 24, 6 A.M.	March 24, 9 A.M.	March 24, 12 M.	March 24, 3 P.M.	March 24, 6 P.M.	March 24, 9 P.M.
	Deg. Fah.		Deg. Fah.	Deg. Fah.	Deg. Fah.	Deg. Fah.	Deg. Fah.	Deg. Fah.
Cow No. 1.—Five years of age. Pale red Alderney. Not in calf.	101.0	Tuberculin injection 2½ c.c. of ten per cent solution.	101.2	101.2	101.4	101.4	101.2	100.0
Cow No. 2.—Six years of age. Brown Jersey or Alderney. Aborted last August. Due to calve in May.	101 4	Tuberculin injection 2½ c.c. of ten per cent. solution.	101.4	104.2	106.0	104.2	104 2	104.4
Cow No. 3.—Ten years of age. Cream-colored Jersey. Aborted in December. Not in calf.	100.6	Tuberculin injection 2½ c.c. of ten per cent. solution.	100.2	102.2	105.8	104 4	104 2	103.4

March 25, 9 A.M., temperatures all normal.

These results seemed to prove that two of the three cows (Nos. 2 and 3) were the victims of tuberculosis, although this seemed difficult to believe in the case of Cow No. 2, who showed every other evidence of the most robust health. In view of the results of this test the writer communicated with the Secretary of the New York State Board of Health requesting that the Board send an inspector to condemn and destroy the two cows which reacted to the test, and recompense their owner.

As there was considerable delay in obtaining the desired permission to destroy and examine the animals post mortem, it was decided to retest all three of them. This second test was conducted in the same manner as before, except that the injection was given at 9 P.M. April 1st.

The following table shows the results obtained:

	April 1, 12 M.	April 1, 9 P.M.	April 1, 10.30 P.M.	April 2, 9 A.M.	April 2, 12 M.	April 2, 3 P.M.
	Deg. F	Deg. F.		Deg. F.	Deg. F.	Deg. F.
Cow No. 1.—Pale red Alderney.	102.2	101.2	Tuberculin injection 2½ c.c. of ten per cent. solution.	101 6	101.8	101.5
Cow No. 2.—Brown Jersey or Alderney.	101.6	101.4	Tuberculin injection 2½ c.c. of ten per cent. solution.	103.2	105.8	104.0
Cow No. 3.—Cream colored Jersey.	103.8	101.6	Tuberculin injection 2½ c.c. of ten per cent. solution.	101.2	102.4	102.2

April 3, temperatures not taken.
April 4, temperatures normal, except Cow No. 2 = 102.6° F.

It will be noticed from this table that Cow No. 3 did not present the characteristic reaction as in the original test.

On April 16th the two cows which responded to the test were slaughtered and a post-mortem examination was conducted by Dr. E. F. Brush, of Mount Vernon, Professor of Cattle Pathology in the American Veterinary College, and the writer, in the presence of several physicians and veterinarians, with the following results:

Cow No. 3 (White Cow) —The thickened mass from the udder was first removed. It apparently consisted of fibrous tissue, a few small cysts, and a little caseous matter, but no gross appearance of tuberculosis was observed.

The mediastinal glands were markedly involved, ranging from the size of a marble to that of a lemon, with cheesy degeneration well advanced. There were also tubercular masses of various sizes in the lung substance beneath the pleura.

Cow No. 2 (Black Cow) —Mediastinal glands enlarged, but not to so great an extent as in Cow No. 3, the largest mass being about the size of a large marble—caseous degeneration well under way.

Small nodular masses in lung under pleura with cheesy centres. On section the lungs were found to be studded with tubercles in various stages of development. Liver and kidneys not involved in either cow. Specimens from the mediastinal glands and lungs of both animals, and a portion of the mass from the udder of No. 3, were submitted to Dr. George A. Tuttle, of New York, Pathologist to the Colored Home and Hospital, for microscopical examination.

His report is here appended.

"NEW YORK, May 1, 1894.

"DEAR DOCTOR:—The examinations of the pieces of tissue from the two cows resulted as follows:

"WHITE COW, No. 3.—Lung: A cluster of tubercles about the size of large peas in and beneath the pleura. The centres of these tubercles consisted of soft cheesy material. Microscopic examination showed minute tubercles in various stages of development. Tubercles consisting of epithelioid cells and giant cells. Older tubercles with considerable fibrous tissue and with tubercle tissue and giant cells around the edges; and others with cheesy centres and tubercle tissue and giant cells around the edges. Tubercle bacilli found in moderate numbers.

"Mediastinal gland, about the size of an egg, consisted of a thickened capsule containing a mass of soft, yellow, cheesy material. Sections of the capsule showed tubercular inflammation, tubercles with cheesy centres, and epithelioid cells and giant cells. Not examined for tubercle bacilli.

"Udder contained several cheesy nodules. Sections through these showed considerable diffuse inflammation and infiltration with leucocytes, also a number of minute tubercles of epithelioid cells, but no giant cells. Not examined for tubercle bacilli.

"BLACK COW, No. 2.—Lung tissue: Result of examination identical with that of lung of White Cow, No. 3.

"Bronchial gland found in the piece of lung showed characteristic changes of tubercular inflammation, cheesy degeneration, tubercle tissue, and giant cells.

"Respectfully,

(Signed) "GEORGE A. TUTTLE, M.D.

"236 WEST FORTY-FOURTH STREET."

Large Families in North Carolina.—Dr. J. M. Hays, of Greensboro', N. C., writes: "*A propos* of a recent item in your columns in regard to the fecundity of women, I wish to state that in Granville County, N. C., there lives a mulatto woman, the wife of Daniel Boone, who is the mother of twenty-seven living children, several of whom have been my patients. This family belongs to a rather large class in that section popularly known as the 'issue free,' they and their ancestors for several generations having never been slaves."

METHOD OF TESTING FOR ALBUMINURIA.

By PHILIP JAISOHN, M.D.,

WASHINGTON, D. C.

THERE are innumerable methods for testing for albuminuria, but one must select the best process and use it constantly in order to be thoroughly familiar with the method, and derive practical benefit therefrom.

Among the common methods, the one most frequently used by the practitioners is: Boil the urine, then add a few drops of nitric acid to ascertain whether or not the urine is cloudy. But this method is too inaccurate to be of any service; and there is another method known as Heller's test, which consists in adding nitric acid carefully to the urine contained in a test-tube, and observing whether or not a band of cloudiness exists at the junction between the urine and the acid. This method is preferable to the former, yet there is a chance of making a mistake; because if there should be phosphates present in the urine, there will be a cloudy band, which, however, differs from the cloudy band caused by albumin; but it is sometimes very deceptive to the inexperienced eye.

I know another test, which is as follows: First acidulate the urine with acetic acid. (Filter it if turbid.) Fill the test-tube one third to one-half with the reagent composed of the following ingredients: Bichloride of mercury, 8 grains; tartaric acid, 4 grammes; distilled water, 200 c.c.; glycerine, 20 c.c.; and then add the urine, drop by drop. By this method one can detect albumin in the urine, when present in the proportion of 1 to 50,000. This is the most delicate test known; even more delicate than the trichloracetic-acid method, which is considered one of the most delicate.

But I have come to the conclusion that these two methods are of no practical use for clinical purposes, because by them one can detect albumin in the majority of cases, whether healthy or unhealthy. This is especially true of the bichloride of mercury test. I have examined twenty specimens of healthy urine and have found albumin in eighteen cases, by the mercurial reagent, which shows the worthlessness of the test. It is a well known fact that even healthy people pass a very small quantity of albumin during certain hours of the day; especially during digestion, and there is no pathological significance in this.

However, if one applies such a delicate test as the one I mentioned, the albumin will show plainly, and will cause unnecessary apprehension to the physician as well as to the patient.

There is one method I am in the habit of using, and which I consider the most reliable and practicable. It is more accurate than the method of boiling the urine and adding a few drops of nitric acid, and not so delicate as the trichloracetic acid, or the mercurial mixture.

Put a few drops of liquor potassii in a test-tube full of urine and filter it. Fill the test-tube one-half with the filtrate; then add fifteen to eighteen drops of fuming nitric acid. By this time the clear urine will be somewhat cloudy if it contains albumin. Boil it over an alcohol lamp or Bunsen flame, and let it stand for one half hour. There will be a sediment of whitish flakes or brownish granules. Boil it again and observe whether or not these will dissolve. If it is albumin they will not dissolve by the second boiling.

This is a fact of especial importance to medical examiners for insurance companies. It is their duty to guard against the admission of undesirable persons to the companies with which they are connected. But, at the same time, they must not apply too delicate a test in examining the applicant's urine; as, by applying such test, the albumin is apt to be found in most cases, resulting in the rejection of the applicant upon the ground that he has albuminuria. Of course such rejections by the medical examiner will be a loss to the company.

On the other hand, the medical examiner makes a grave mistake who applies such a crude and inaccurate method as boiling the urine, and adding a few drops of nitric acid, and then declares that there is no albumin; and the applicant is accepted, even though he may have albuminuria. The last-named test will not always bring out the albumin, unless there be a considerable amount in the urine.

Admitting applicants to the companies on the strength of such a test, in my opinion, is running a great risk. The method I prefer, and already described, is really the modification of so-called "heat and nitric acid test." If albumin shows by this test, it is a case for clinicians to watch the patient more carefully, and for the examiners of insurance companies to be justified in rejecting the applicant.

I may add here, that examination of urine should be required by the army, navy, and marine hospital service, in connection with physical examination of candidates for soldiers, officers, and sailors.

There is no other secretion or excretion in the human body which gives more information about the internal affairs of the constitution than urine, and it is therefore a subject deserving a careful study and investigation. It is hoped that in the near future all the practitioners in the land will realize the importance of this, and examine the urine of their patients whenever it is possible. It is true that most general practitioners have neither time nor facilities to do the chemical and microscopical examination of the discharges of their patients; but it is advisable for them to have this kind of work done by some one who has experience, skill, and time to do it. It is a justice to the patient as well as to the attending physician.

Correspondence.

THE DOCTOR'S WIFE.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your editorial on "Some Experiences of the Doctor's Wife," in last week's issue, strikes the key-note of your innate gallantry, which doubtless will cause many physicians' help (?) mates to induce, I almost said compel, their derelict husbands to subscribe to the MEDICAL RECORD.

At the risk of appearing less chivalrous than we would like the entire profession to be, I crave a little space anent your comments on the Brooklyn physician's wife who enriched the columns of the *Tribune* with her experiences.

Ab initio, the tone of discontent which characterizes the quotations you publish is all too prevalent among physicians' wives. They should rather be proud to have been selected by men who sacrifice themselves for the good of humanity.

Madam says, in connection with her life as a physician's spouse that "this is a big world and a hard world." Big in a sense it is, to those who have travelled much, *e.g.*, from the Bridge to the "L" terminus and back. But those who voyage from continent to continent, find distance annihilated and the world made very small by the people they meet, especially those who find nothing but cause for complaint in their destinies. The latter, like your fair writer, find it also a hard world. They forcibly suggest the woman who, on reaching heaven was welcomed by her optimistic husband with: "Well, at least you will say that this is a pleasant place!"

"To people of a certain taste, it may be," she sniffed, "but your professional engagements doubtless left you no time to select a dry cloud for me. I am consequently full of rheumatism, and this wretched halo neither sits straight on me nor has it any pretence to style. Had it been a fetid ulcer, or a broken bone, or some filthy disease on some immoral low wretch, you would have given it attention, but as to me——"

An anthem by the celestial choir drowned the remainder of her speech.

Madam objects to being "Mrs. Doctor." I once tried to meet this objection by saying that German women are very proud of the marital title "Frau Doctor;" the fair objector sneered that this was "too tonic" (pray remember it was *her* pun). But would your, or rather the *Tribune's* Brooklyn medical spouse rather be Mrs. Butcher, Mrs. Baker, or Mrs. Candlestick-maker? If so, why did she elect to become "Mrs. Doctor?" If she made so serious a mistake in her choice, why does she flaunt it before the world in a widely circulated medium? Why does she advertise that intellectual smallness which prevents her appreciating the exalted position she occupies?

She says that the certificate she obtained at the marital altar "has nothing to do with degrees." She is manifestly, then, one of that class which cannot be elevated by association with her husband. What if she has been asked to "set a broken arm or pull a tooth when the doctor (with a lower-case initial) was out?" Would there be anything degrading in having learned to apply a temporary dressing, or in cleansing the cavity and for the time being stuffing the tooth with cotton soaked in laudanum? Aside of thus holding the case for her husband—of course I refer to the broken arm—would it not be better if she gave attention to relieving human suffering, rather than to be moaning her lot and incidentally trying to besmirch the profession?

Madam objects to life in a house behind a brass sign. She correctly explains the cause with "when you stand in the window you are not a private woman in a private house." A woman who properly attends to her house and family has no time to stand in the window.

Madam complains that the physician's wife is not sure of her evening amusements, and finishes with a pathetic protest that she must "look after the family carving."

What hardships indeed! While her husband loses the very entertainments from which, by the way, his wife does not abstain, he is earning, by the hardest of hard work, the means for her to enjoy life and leisurely complain about it. And as to the family carving—a man who would allow his wife to carve while he goes off to save a life, is capable of any iniquity, even so vile a one as to neglect to button her shoes.

When one reaches the age that entitles reminiscences, one cannot but recall antitheses. I once had occasion to call on a successful practitioner, whose home life, because of its happiness, was the object of much comment. The doctor was not at home. His wife urged me to wait for the doctor, as she had sent for him a moment before I explained that I was not a patient, but a colleague. "I am so glad, Doctor," she responded, "won't you come in quickly, please. I have a man on the operating-table with, I think, his posterior tibial artery cut. I controlled the hemorrhage with an improvised tourniquet, but of course would not attempt to ligate."

I then observed that Mrs. Doctor (with a capital initial) had stained her elegant dress with blood. Her hat and gloves were on the floor of the operating-room; the patient was lying with his injured leg raised on an inverted chair, the trousers and drawers (I blush for the Brooklyn Madam at their mention) slit, and as neatly applied a tourniquet as I ever saw controlling the bleeding.

Just then her husband came in. She assisted him at the ligation; pride in her husband and in herself gleamed in her eyes and when all was done, she patted him affectionately on the cheek and said, "Good boy, darling."

"But, dearest," he said, "you have lost the matinée in consequence, and your new dress is ruined."

"What is a matinée or a dress to seeing a good operation performed by a good surgeon, and that surgeon *my* husband?"

That woman, whose name may not have been Harris, was proud to *possess* her husband; she sought happiness in being "the wife of Dr. Harris," and did not complain of the world not calling him "the husband of Mrs. Harris."

Is it a wonder that such a man succeeds? He leaves home with encouragement from her; he hurries home when tired, exhausted, and in doubt, to get more encouragement and stimulus for study and work from her; she is all and everything to him; both are happy, and she consequently does not fly into print to proclaim what a miserably wretched creature she is—probably because she fails to wreck her husband's career.

Are these lines too severe for Mrs. Brooklyn Doctor's Wife? Perhaps. But as she is one of very many who talk exactly as she writes, the reproof may not be *malapropos*.

Yet the morbidity she expresses is not her fault. In reality she should not be blamed. The real culprit is her husband—he should not have been such an idiot as to marry her, nor, having married her, so great an ass as to permit such sentiments to grow in her.

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"AS OTHERS SEE US."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Having read the leading article entitled "As Others See Us," in the MEDICAL RECORD for September 15, 1894, which article treats on Dr. Polaczek's book, "The Medical Science in the United States," I think it may interest your readers to learn what another German, Professor Dr. M. Schüller, of the University of Berlin, who has visited America, has said on Dr. Polaczek's publication. He writes in *Der ärztliche Praktiker*, No. 32, as follows:

"The book disappoints us in so far as it contains just the least of that which the title promises to give. The author confounds science with practical medical arrangements for instruction, with the modes of providing for the sick in public hospitals, with institutions of public hygiene, etc. A picture of medical science in the United States, on account of the part which the Americans have taken, and which is by no means a small one, in the progress of medical science, for instance in the field of anatomy, surgery, pharmacology, and especially operative gynecology, the reader of the book will look for in vain. What the author gives in his book are treatises on American hospitals, on therapeutic currents, on the caring for the insane, on the American physician, on American universities, on the sanitary and hygienic conditions of the large cities. We find everywhere the intention to give the German reader a true picture, to do justice. According to our judgment the author has but succeeded in the chapters on the Insane, on Quarantine, on Sanitary and Hygienic Conditions of the Large Cities, on the American Physician. The chapters on the American Hospitals and the American Universities are, it is true, quite correct in what they give, but they do not by far exhaust the subject treated. In regard to the hospitals, we notice in America, as it is quite natural in such a large continent with different distant States and cities, and therefore different climates, considerable variety in regard to architectural plans and inner organization. Besides, some of the arrangements which differ from those in Germany are not specific American, but originally English. Especially incomplete, however, appears the superficially written chapter on American Universities. We cannot overlook some of those easily recognizable drawbacks of the specific American University education, but we should not overlook, either, the fact that just at present mighty exertions are made in almost every State to remedy the existing evils, and to make the medical instruction more profound."

A. ROSE, M.D.

NEW YORK.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 22, 1894.

	Cases.	Deaths.
Tuberculosis	68	84
Typhoid fever	27	7
Scarlet fever	38	5
Cerebro-spinal meningitis	0	0
Measles	24	5
Diphtheria	107	25
Small-pox	5	3

The Anti-tetanic Serum and How to Use it.—In the treatment of tetanus an anti-tetanic serum, obtained from the horse and prepared in the dry state and sent out in tubes each containing four to five grammes, is a little more than the minimum dose considered curative in the case of a man. The substance is to be dissolved in distilled water, and injected subcutaneously. The dose must vary according to the gravity of the symptoms, and requires to be repeated in smaller quantity for several days. In regard to the cases hitherto reported, doubt has been expressed by some as to the severity of the attack, it being well recognized that the less acute forms of tetanus by no means partake of the gravity which attaches to those of more acute onset. These doubts are, however, in some cases ill-founded, and now that the material for the treatment can be stored and kept at hand we ought quickly to accumulate sufficient evidence to decide on its utility in surgical practice.—*British Medical Journal.*

Anarchists, Anti-vaccinators, and Anti-Pasteurists.—Anarchists, anti-vaccinators, and anti Pasteurists appear to be foregathering just now in a friendly and instructive fashion. The anarchists have been assembling at a friendly meeting at the house of the president of the Anti-vivisection League in Paris, and a little outdoor gathering, including a quaint collection of "Anti's" generally, to protest against the British Institute of Preventive Medicine has had its little innings and is reported in all the papers. It is just as well that these wild people should have their silly say unanswered and without comment. But it is rather painfully comical to find a minister and a man of Mr. G. W. Russell's culture writing to them to announce that he detests Pasteurism—and of course also Listerism. Why not add that he has a contempt for the equator and grave doubts about gravitation? It reads oddly at this moment when the whole world has been meeting to do honor at every quarter of the globe to its two greatest benefactors—Pasteur and Lister, and on the day after Lord Salisbury's eulogy *urbi et orbi* of the Listerian conquests as among the few great positive victories of modern science on which he could definitely congratulate mankind. But oddity is the badge of the anti-party, who delight in posing as "against all science" and "agin all government," and appear to think that there is something progressive, emancipated, and metaphysical in this attitude. To be logical, Mr. Russell should add the inevitable converse of his proposition, and declare that he loves small-pox, is much attached to hydrophobia, and adores blood-poisoning and high hospital mortality. This would put him quite in sympathy with his friends, the orators in the cart to whom he addressed this interesting missive.—*British Medical Journal.*

A Monument to Semmelweiss.—During the session of the Congress of Hygiene and Demography at Budapest, a monument was unveiled to Semmelweiss, the precursor of Lister. As long ago as 1847 he urged the necessity of washing of their hands in an antiseptic solution by surgeons prior to undertaking an operation.

The Sterilization of Bread.—At the meeting of the British Medical Association, on August 3d, the investigations of Mr. Walsh, of London, and Dr. Waldo, of Southwark, as to whether baking sterilizes a loaf of bread, were the subject of an interesting discussion. Mr. Walsh read a paper based on a large series of experiments. Its main conclusion was that baking does not necessarily destroy the vitality of micro organisms contained in dough. With regard to temperature, they had found that the average maximum temperature in the centre of a large loaf varies from 163.4° to 186° F., and in a small loaf from 186.8° to 203° F. As the heat increases steadily in the centre of a loaf, any organisms present are exposed for a short time only to the maximum temperature reached. The average micro organism will withstand a prolonged exposure to a much higher temperature without being destroyed. Spores are much more resistant again, so that on theoretical grounds alone, having ascertained the maximum temperatures in the centre of the loaf during baking to be those mentioned, they might venture to predict that organisms (or their spores) would not be destroyed by the process of baking. By the method of plate cultivations they succeeded in obtaining thirteen different species of micro-organisms from the centre of recently baked (a few hours after baking) loaves. The latter were obtained from bakeries in different parts of London, rich and poor. Numerous experiments were carried out for them by Mr. Walter Severn on sixty-two loaves. It was clearly shown, if the results were trustworthy, that certain non-pathogenic organisms are able to survive the process of baking.

Some Curious Life Insurance Details.—According to the *Medical Press* it appears that in Germany a man who loses both his hands in an accident can claim the whole of his life insurance money, if he be insured, on the grounds that he has lost the means of maintaining himself. The loss of the right hand reduces the claim to from seventy to eighty per cent. of the total; that of the left to from sixty to seventy per cent.; the thumb is valued at from twenty to thirty per cent.; the right index finger at from fourteen to eighteen per cent.; and so the reduction continues until the little finger is reached, when the percentage is put down at from nine to twelve. No figures are given as to the value of the various segments of the lower extremities.

Cramps in the Legs in Diabetes.—Unschuld calls attention to an early symptom of diabetes, which is seldom mentioned by writers on the subject but which is yet frequently found, and may assist in an early diagnosis of the affection. This symptom consists in cramps in the calves of the legs, and is found in about twenty-six per cent. of all cases. The pains occur with especial frequence in the morning upon waking, and occasionally also during the night, when they are usually accompanied by a desire to urinate. They are rarely troublesome in the daytime, unless after a nap or a bath. Cramps of this nature, occurring in a person in feeble health, should always, Unschuld holds, suggest the necessity of an examination for sugar.

The Confidential Relations of the Physician.—A correspondent, "Medicus," writes: "Your view of the decision of Judge Cole in your editorial of September 1st, is doubtless that of the majority of the medical and legal professions, but the learned jurist's action must be based upon the ruling of the Attorney-General of the United States and Supreme Court, since the Naval Regulations require medical journals (containing as they must do, a record of personal and family secrets 'patient's confidences' and 'privileged communications' necessary for diagnosis and for pension claims) to be 'subject at any time to the inspection of the captain and fleet surgeon.' This violation of the spirit of the Hippocratic oath is not required in the army nor in the Marine Hospital Service."

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Original Articles.

THE TREATMENT OF DIPHTHERIA, WITH SPECIAL REFERENCE TO THE EFFICACY OF ANTITOXIN.

By ADOLF BAGINSKY, M.D.,

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In 1891 I published, in the "Archiv für Kinderheilkunde," a paper on "The Therapeutics of Diphtheria from the Kaiser and Kaiserin Friedrich Children's Hospital," in which I stated that certain requirements of the remedy should be formulated: 1. The remedy should be capable of destroying the diphtheria bacillus at the seat of infection without injuring the surrounding tissues or the body. 2. The remedy should prevent the formation of pseudo-membranes, which latter might cause laryngeal stenosis and asphyxia. 3. The remedy should prevent and neutralize the products of the bacilli in the blood and lymphatic circulation, possibly also the septic material in the nerves.

The therapeutic measures consisted in applying local treatment to the pharynx, and strengthening nourishment, with cardiac tonics. Other remedial agents, when the diphtheritic process extended to the larynx, threatening laryngeal stenosis, were tracheotomy and intubation.

The local remedies used were those which had both a solvent and an antiseptic effect, namely: Acid. salicylic., 1–2 to 1,000 for gargling and irrigation with the syringe; acid. boricum, 3 per cent.; kali hypermanganic, 3 per cent; iodid. chlorid., 1 to 2,000; auro-natrio-chlorat., 1 per cent., for swabbing. Acidum lacticum, 10 per cent., for swabbing; 2 per cent. for spraying. Acidum carbolicum, alcoholic solution of 5 per cent., for swabbing; 2 per cent. to 3 per cent. for gargling. $HgCl_2$, 1 to 3,000, for gargling; 1 to 500 for swabbing. Oleum citri for spraying; acid. acetic., 2 per cent. to 3 per cent., for gargling, and 5 per cent. for swabbing. Ol. terebinth. for inhalation. Ichthyol, 2½ per cent., sublimat., 1 per cent., watery solution.

Iod-phenyl mercurial preparation by a chemist (Goldmann) is at present being tried. Ferric chloride is applied as an ointment with pledgets of cotton, and mechanical friction avoided.

Of all remedies mentioned thus far, those containing bichloride, and after the latter the 3 per cent. (alcoholic) carbolic solution proved most efficient. Boric acid, salicylic acid, iod trichlorid., and auro natrio chloratum were absolutely inefficient and useless. Acetic acid proved useless. The kali hypermangan. proved beneficial against the fetor, but negative in diphtheria. The ol. citric. and ol. terebinth. were decidedly inefficient; the latter was used in a steam spray. I am decidedly opposed to the application of local caustic treatment, having always had deleterious results from it. Besides solvent remedies like lactic acid, and aq. calcis, 5 per cent. to 10 per cent., solutions of papayotin were used, and were applied with cotton swabs; this did not, however, prevent the extension of the process to the larynx. Besides the local remedies mentioned, an ice-bag externally and cracked ice internally were used, until the inflammatory infiltration of the pharyngeal mucous membrane had disappeared. Subacute and chronic swellings, rather late hyperæmias in the pharynx, were treated with a tannin solution, 1 to 80, with twenty parts of glycerine added.

In two cases treated with submucous injections of 3 per cent. carbolic solution (Heubner), injected in the vicinity of the infiltrated tonsil, they were decidedly useless, and showed at post-mortem hemorrhages at the seat of the injection. Among internal remedies sherry, port wine, champagne, and Greek Alicante wine were used. Cognac, subcutaneous injections of camphor in oil, and 10 per cent. alcoholic solution were also employed. In mild cases 1 to 2 per cent. kali chloric. was used, but was always discontinued, fearing nephritic complications. The same was true of ol. terebinth., which most children vomited. Decoct. china, 10 to 100, and added to this, aq. chlori. ten parts; tinct. ferri chlorati æth.; tinct. ferri pomati; and papayotin wine were used internally. Inhalations of oxygen did at times redden the lips and mucous membrane of very sick children, but did not have any curative action.

To counteract the deleterious effects of heart failure subcutaneous injections of strychnine, camphor, and caffeine were used. I have recently discarded entirely the use of strychnine. The complications—pneumonia, pleuritis, nephritis—were treated in the regular way. Antipyretics must be very cautiously used in all complications following diphtheria; even cold packs must be cautiously administered. Of 244 cases 125 were cured, 9 were transferred, 9 refused to be treated, 5 were convalescing, 95 died. The mortality was 40.04 per cent. Thirty-seven of these cases were of the severe gangrenous septic diphtheria, and all died. Deducting the latter, and including a great number in which tracheotomy was performed, there remains a mortality of 23.01 per cent.

Since the time of the German and French authors, more especially of the Koch school, things have changed considerably. Behring is credited with giving us a new remedy for diphtheria. In an elaborate book published by Behring he details the subject, and treats of it exhaustively. Behring uses the blood-serum of animals immune against diphtheria as a specific remedy for the treatment of diphtheria, or for the prophylaxis of cases having been exposed to diphtheritic infection. Associated with Behring have been Ehrlich, Wassermann, and Wernicke, besides a great many others. Hans Aronson has followed the directions of Behring, and has made a serum which appears to be equally as good, if not better, than that made by the former gentleman.

In the Kaiser and Kaiserin Friedrich Hospital in Berlin we have used an antitoxin which was generously given to us by Aronson. The results obtained by the use of antitoxin have been reported by one of my assistant physicians, Dr. Katz. From March 14th until July 25th, 163 cases of diphtheria were treated, including numerous malignant cases. Of this number only 23 died, so that the mortality was 14.37 per cent. This excellent percentage has never yet been equalled with our best form of treatment even in the mildest epidemics. Among the fatal cases there were several tuberculous children, and several whose genuine diphtheria was complicated with scarlet fever, so that the mortality of uncomplicated cases of diphtheria will be much less. It is difficult to say if a nephritis would have appeared as well without as with the injections. The course of nephritis in the cases treated with antitoxin were exactly the same as otherwise. Severe cases of nephritis following injections were never noticed; whereas several cases

with severe albuminuria had wonderful improvement following the use of antitoxin injections. The heart did not show any difference in rhythm, or in the heart-sounds, or in the character of the pulse. On the fourth day following an injection a small abscess appeared in one case, which was treated by incision, and rapidly healed. Child discharged cured.

Several cases showed exanthema following an injection, especially on the extremities and in the region of the knee-joint. No elevation of temperature accompanied the exanthema, nor was there pain. They appeared like scarlet fever, but in small, confluent places, with no temperature and rapid disappearance, proving them to be simple exanthemata.

Other cases looked like measles. There was, however, no desquamation noticeable. There were four typical cases of urticaria of the whole body. Katz noticed in a four-year old child a distinct capillary pulse when the nettle-rash appeared. Constitutional symptoms were never noticed, and erysipelas never occurred. The membranes in the pharynx behaved variously. In some they appeared to spread, while in others they seemed to disappear. Not one single case had laryngeal diphtheria nor stenosis after the injection. Those cases with laryngeal stenosis and croupy cough were admitted with these symptoms, and all were treated either by tracheotomy or intubation soon after their admission. In one case, a child with excessive dyspnœa (laryngeal) was tracheotomized, and recovered. The glands did not seem to be influenced by this treatment. There was no specific action noticeable which could be attributed to this remedy. Some cases appeared very bright; this might have been the case otherwise.

The temperature showed nothing of interest In two children there was a sudden rise followed by a sinking to normal. In most cases the temperature sank after the injection. If the pulse was bad, the heart-sounds weak, and the rhythm irregular, the remedy did not seem to influence the same. At times, absence of patellar reflexes, processes of accommodation, rhythm of the heart, paralysis of the musculi aducentes, paresis of the respiratory muscles frequently appeared. Death took place in the same manner as in ordinary cases. Among the cases mentioned several died of pneumonia, paralysis of the heart, and septicæmia. Those that died of croup were so far gone that we did not expect to save them; still, tracheotomy was performed, and large membranes pulled out of the bronchial tubes. Of the septic cases three were admitted moribund, and a fourth case was in a typical state of septic diphtheritis. Pneumonia cases that died were of the severest kind. Improvement appeared so frequently during its course that at times there was good hope. In those children (brothers and sisters) where at times the disease was treated within the first few days, the mortality was less than 10 per cent. In former times the mortality among children where tracheotomy was performed was much greater; whereas formerly from 22 per cent. to 24 per cent. were cured, since using the antitoxin on severest cases 34.30 per cent. were cured. It was difficult to ascertain the cause of the disease. Twenty-five cases which had been exposed to diphtheria were carefully examined a number of days, and all developed diphtheria. As they were examined daily, they were attended when the first symptom appeared. Not one of these developed nephritis nor cardiac trouble. Their sisters and brothers, who had been previously admitted to the hospital, some as severe cases, died. All twenty-five cases were discharged cured.

Dr. Aronson gave us a mild solution of his remedy, which was used in seventy two cases for immunity. Of all these cases but eight took sick very mildly and recovered easily. We learned that much larger doses were necessary to produce immunity in children. Not one case relapsed nor showed a single symptom. It will therefore appear that we have been using a remedy which deserves further trial. If, therefore, the remedy will give even more beneficial results than heretofore, then we have in the blood serum therapeutics inaugurated by Behring one of the greatest triumphs in the annals of medicine.

DIPHTHERIA ANTITOXIN OR HEALING SERUM IN THE TREATMENT OF DIPHTHERIA.

By LOUIS FISCHER, M.D.,

NEW YORK.

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WHILE in Berlin a month ago, Professor Baginsky gave me every possible opportunity for acquainting myself with the new antitoxin treatment for diphtheria. The clinical experience seen abroad is my reason for detailing the method for use in both hospital and private practice

It will be proper to state that at present two kinds of "serum" are being used. They vary only in strength and are made by rival firms.

The one firm sells it under the name of "Behring-Ehrlich Heilserum," the other is "Aronson Heilserum."

As I saw but a limited number of cases of diphtheria at the Institut für Infektions Krankheiten (Koch), by courtesy of Dr. Wassermann, I will confine myself more particularly to the consideration of Aronson's serum, with which my experience is more extended.

This serum is a clear, colorless liquid of thick consistence, quite sticky, and has a slight carbolic odor. In order to preserve it, it is mixed with 0.2 per cent. trikresol, as some of the organic material might otherwise decompose.

Two objects are sought for in using antitoxin: 1. Immunity during an epidemic, or where a person has been exposed to diphtheria. 2. Healing after the disease exists.

In giving antitoxin it has been customary not to neglect the other usual forms of treatment, and it will be interesting, I hope, to detail a typical case.

The place for injecting the antitoxin is behind and between the shoulder blades and also the connective-tissue of the arm and the thigh. Gentle massage at a slight distance from the point of injection is done to diffuse the injection; but this is not absolutely necessary.

Of almost two hundred cases treated in the Kaiser and Kaiserin Friedrich Hospital but one abscess appeared, which was incised and healed promptly. No reaction followed injections.

It will be remembered that when Koch's tuberculin was injected, fever, chills, diaphoresis, etc., were noticed, which made a typical and distinct reaction as the result of the injection. These phenomena were evidently the natural consequences of a septic material thrown into the circulation, as was demonstrated by Dr. Shrady and others who used the lymph in New York.

When antitoxin is injected, however, there is no reaction. The quantity used varies according to the severity of the symptoms, the gravity of the epidemic, and the age and vitality of the patient. In some cases one injection suffices, whereas in others a second injection on the succeeding day may be required. The usual dose is 5 to 10 c.c., hypodermically. At times 20 c.c. is administered when a very rare epidemic exists.

The instrument used is an ordinary hypodermic syringe with asbestos fitting, which can be sterilized in a Bunsen burner, or the Koch's syringe is used in some hospitals abroad.

Exanthemata, the rash of scarlatina or measles, resembling typical urticaria, sometimes appeared following injections, but without an evolution of temperature. These eruptions last several days and then disappear without special treatment.

Malignant cases of diphtheria are greatly improved and frequently recovered; quite frequently even cases with laryngeal stenosis recover rapidly, and in which tracheotomy was even performed.

Professor Baginsky, who has prepared a special paper

for the MEDICAL RECORD, will give a detailed account of the use of antitoxin, by Dr. Katz, under his directions. All of his assistant physicians, notably Dr. Lewin, in the diphtheria pavilion, gave me detailed accounts of their cases, which are virtually the same as Professor Baginsky has reported. Complications were rarely noticed, and symptoms of cardiac weakness directly attributable to the antitoxin were not observed.

The immunity conveyed by an injection of antitoxin lasts about three or four months, after which it will be wise to repeat the injection.

Dr. Hans Aronson told me that the serum made by Schering's factory is much stronger than Behring's, and expressed it by saying that his serum of 400 Einheiten was equivalent to 800 of some specimens obtained by him.

It is the aim of Aronson to produce a serum much more concentrated than the one in use at present, for he informed me that 5 gm. of the present serum was as strong as one litre or 500 gm. of what was previously made in the beginning of the manufacture of this remedy.

The following case is the first one in which I have had occasion to use antitoxin in private practice.

Dora T——, aged eleven, a healthy, well-nourished girl, had been ill about one day. On the same floor of this tenement-house, in an adjoining room, a boy, aged fifteen, was sick with diphtheria, being attended by Dr. Schmid. My patient was exposed, and her cautious mother examined her throat and discovered some patches. When I first saw her I found the temperature in the axilla 102⅗° F. There was intense thirst, general pains in the body, marked malaise, dysphagia, and a headache. Pseudo-membranes covered both right and left tonsils and the posterior pharyngeal wall. I ordered a placebo, and returned with Dr. Gerlach, at present a physician at the New York Post-Graduate Medical School.

I first made a culture from the throat, the report proved Klebs Loeffler bacilli, verifying the clinical diagnosis. I then injected 5 c.c. of serum with a small hypodermic syringe, at which injection quite some serum was wasted. I then took a better syringe, and having sterilized the point in an alcohol lamp, injected 5 c.c. of Aronson's serum in the back by pinching a fold of skin between the shoulder-blades. No reaction followed. The next day my little patient was greatly improved in both subjective and objective symptoms. Greenish-yellow pseudo membranes remained about two days following the injection, and on the third day no trace of membranes were visible, although the pharynx and tonsils were still inflamed. On the fourth day no sign of the disease remained, and the little girl was up and seemed to be quite hungry. The general malaise seemed to pass off about one day after the injection. This is near the sixth day and the membranes have entirely disappeared. The child eats and sleeps well and is apparently in perfect health.

This little patient was attacked much more severely than the first child that infected her. My patient eats and sleeps well, and is apparently very bright. A careful examination of the urine was made. Albumin sparingly and an excess of phosphates were present. The trace of albumin also disappeared. No reaction followed the injection of antitoxin.

In the same family one other child has received 2 c.c. of serum as a prophylactic. I am anxious to see if she will be infected or remain immune.

In some severe cases much larger doses may and should be used, for Aronson told me in Berlin that he frequently injected 50 c.c. at one injection, and this may even be repeated on the following day, although the usual dose injected was 10 c c.

This will convey a general idea of how this remedy may be employed, and if we can rely on statistics, then we have in antitoxin not only a positive remedy in diphtheria, but the beginning of a new form of treatment which will eventually save the lives of thousands of patients.

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SURGICAL PROBLEMS IN INTRA-PELVIC AND ABDOMINAL DISEASES.

BY A. H. CORDIER, M.D.,

KANSAS CITY, MO.

SOME time ago, while doing special work in a large Eastern city, I had many opportunities to see the work of the various operators, and it was a noticeable fact that, while one operator would have a mixture of the worst neglected and complicated cases imaginable, including old adherent and caseous Fallopian tubes and ovaries in emaciated and septic patients, another operator's cases would be confined to the removal of cystomas and plastic vaginal and cervical cases. This led me to inquire of one of the operators why he did not have so many "pus cases" as some of his confrères. He replied that he believed that "the woods are not full of them," as some would have us believe. A few days later I visited this same gentleman's clinic, which is a large one, and in two hours I found six pairs of old, sequestrated Fallopian tubes full of pus, carried around by six of the most careworn and miserable-looking women imaginable. They had their vaults frescoed with Churchill, and were directed to return for another decoration the following week.

Conservatism is a grand principle, but unfortunately, in the hands of skilful men the application of this rule is only too frequently responsible for destructive or complicative delays, if I may use such a term. Conservatism is a prophylactic if early and intelligently carried out or applied. It is equally injurious, if used with this same idea in view, in cases where time and experience have demonstrated its futility.

Occasionally an article appears in some of the many valuable medical journals of our country entitled "A Plea for Conservatism," or the like. That these articles are well worded by conscientious practitioners in most instances no one will doubt, and to one unaccustomed to seeing the true pathology from a practical stand point, they carry with them weighty evidence that, with rare exceptions, all surgical procedures for the relief or cure of the same, are unnecessary and unwarrantable. But to him who has handled these cases surgically, and understands their progress, the position of the so called conservative is not well taken. Many are attempting to do this class of surgery (pelvic) who have not the anatomical or pathological knowledge or practical experience to enable them to make a diagnosis between an operable or non-operable case. To this class sermons on qualifications and attainments should take the precedence of lectures on operative conservatism.

Good missionary work is being done in this field by educating the general practitioner and the specialist that they should go hand in hand in their work. By friendly discussions and exchange of views on topics of vital import to both, the patients reap the benefit of the combined council.

We have men of renown in this country as operators and authors, whose utterances along the line of so-called conservatism are producing much mischief and causing many deaths by the adoption of these false doctrines by lesser lights. After seeing much of the work of some of these men I am surprised to see some of their ideas in print so foreign to the practice actually pursued by them in their work. One is almost tempted to doubt the sincerity of some of their utterances.

We should advise against the removal of sound organs, but at the same time endeavor to impress upon our associates the necessity for early surgical work where experience with like cases has demonstrated the futility of any other course.

Operations for the removal of diseased appendages are not followed by the same amount of reflex disturbance as are those cases where sound organs are removed to cure (?) a globus hystericus, or the like—an unwarrantable procedure. Most women with suppurating diseased tubes and ovaries are unsexed by the pathology, and I

have had women with these diseases at an age too early for a normal menopause to present all the climacteric phenomena. In many cases it is not a question of "Will this woman have an exaggeration of the menopause phenomena if we operate?" so much as "Will she be free from pain after the operation, and can she recover without the aid of surgery?" These questions have been answered many times, both by non interference in the cases, with failures, and by demonstrations at the operating-table—the successes. Women whose appendages are diseased to such an extent as to require removal are sick women, and are necessarily in that low vital state that where there is an inherent tendency to insanity or neurasthenia the surgical procedure for the removal of the diseased structures may precipitate the mental phenomena to an exaggerated and disagreeable degree.

If we are not to remove life-endangering and comfort-breaking pathological processes when found, pray tell us what are we to do? Fold our hands and let nature (pathology) take its course? Or do worse, visit these cases with poultices, Churchill, and hypodermics? We can illy afford, as true surgeons, to cater to the plea that the poor sufferer will be robbed of her womanly traits; that she will be despondent, lose her sexual desires, suffer from flushes and flatulence, and that her husband (too often responsible for the wife's sufferings) will become dissatisfied with the post operative condition of his wife. I have never seen a woman suffering with diseased appendages where the disease was of sufficient severity to require removal of the organs, who was not a sexually useless and despondent wife, and a sick woman as well. Sound organs should not be removed. Any condition that may be induced by the surgical procedure may likewise be induced by the continuance of the disease requiring the surgery.

I believe the sexual system is located elsewhere than in the tubes and ovaries. The nymphomaniac manifests not only an increased sexual desire, but a loss of self-control, often with hallucinations and delusions, the whole cycle having its origin in the cerebrum.

Radicalism is a dangerous expression to use; equally harmful is the term conservatism applied to a disease the tendency of which is to destroy function, make life miserable, or produce death if too long a delay of a proper procedure for its cure is permitted.

Many cases early in the history of the malady are permanently cured by intelligent and skilled surgery. The same case, if allowed to run an uninterrupted course for any length of time, may assume proportions or characters of some magnitude or danger that to attempt to relieve the same would not only be fraught with danger from the operation, but the crippled surrounding organs would preclude the possibility of a complete restoration to health.

These are cases that bring disappointment to the patients and friends, as well as to the sanguine physician and surgeon, run up the mortality, and give surgery a bad name.

It is the early removal of diseased structures, the history of which is to continue a downward course, that gives us a *nil* mortality, the patient renewed health, and the family physician increased confidence in the justifiability of the operative procedure.

Early operations are not only curative measures, but prophylactic methods as well. It is not only the diseased and worse than useless organs and structures the true abdominal surgeon is removing, but he is liberating sound imprisoned organs, the function of which is essential to life. This is not only life-saving work, but a comfort-giving procedure. No true surgeon is clamoring for a thousand or ten thousand laparotomies, but is ever pleading for timely needed work—is ever pleading for the recognition of the necessity for quick surgery in cases where surgery, at some time in the history of the malady, becomes necessary.

No one at this time would think of advising a woman to wait until the growth was so large or her physical condition such that she could not walk a mile, before having the tumor removed, as was done a few years ago, by a great writer. This would be dangerous conservatism.

It is as absurd to call the removal of a sequestrated Fallopian tube and ovary a mutilation, as it is to call an amputation of a hopelessly injured leg a mutilation. These operations are performed to fulfil strictly surgical indications—saving life and relieving suffering. It is a daily occurrence to see reported that a case diagnosed as appendicitis has recovered. That this is true no one will doubt. Many cases reported as recovered have since died from recurrence of the disease, and many an appendix, supposed by the medical attendant to be dangling healthfully in the peritoneum of his patient, is saturated with Müller's fluid or alcohol, in a specimen jar, while the patient has long since died from a perforation, or has been saved by good, timely surgery. No operation in surgery has a higher mortality than that of the delayed operations for the removal of a diseased vermiform appendix, but if done early the procedure has an almost *nil* mortality. A late writer reports twelve cases treated on the expectant plan with two deaths (sixteen per cent. mortality), and two cases with recurrent attacks (sixteen per cent. of recurrences). The writer says of the two who died that they were almost in *articulo mortis* when first seen by him. He does not tell us whether he put on a fresh poultice and hid from view the big abscess bulging in the right iliac fossa, or gave the patient an extra dose of opium to relieve the pain of the sufferer and obtund the senses of the doctor. These cases should have been seen by a good surgeon who would have stopped all opiates and let out the pus, applying the same surgical principles to this locality as to other parts of the body: "When you find pus, let it out." Appendicitis is a surgical disease, and the surgeon should see the case with the physician as soon as the diagnosis of appendicitis is made. Let the physician and the surgeon watch the case together.

The modern application of the principles of surgery as applied to diseased Fallopian tubes is the same that has been practised for ages as applied to the surface of the body. A felon is lanced, the earlier the better. The good surgeon does not advise delay, and while waiting paint the finger with Churchill or apply hot irrigation. As soon as evidences are present that pus is forming he lets it out.

How thankful the abdominal surgeon would be could he lift up a pus-filled Fallopian tube without entering the peritoneum, "rip it up the back" (as suggested by a late writer), scrape it out, destroy all the remaining epithelium, and by redressing it restore its calibre so that the spermatozoa may throng its canal and pregnancy take place, just as though this culture tube had not been a hot-bed for gonococci and other pathogenic bacteria for months previous.

All cases of salpingitis are not operable cases, but the majority of cases seen by the specialist are old purulent cases with tubes filled with pus and caseous *débris* strictured in one or more places, uterine and abdominal ostia closed. Here it is conservatism to remove these dangerous sequestra.

Hardly a week passes without seeing one or more cases of far advanced cancer of the cervix uteri extending into the broad ligaments, bladder, or rectum. These are inoperable cases when so far advanced. Again I see cases where a diagnosis of a cauliflower growth has been made, which proves to be a badly lacerated cervix, with the resulting local mischief attending an unhealed tear in this locality. Surgical diseases should be attended by the surgeon in conjunction with the regular medical attendant. The time to operate, if necessary at all, could then be arrived at mutually and timely.

When the masses are educated in every sense, when gonorrhœa is stamped from the face of the globe, when the perniciousness of criminally induced abortions

and the dangers of the indiscriminate use of the sound are understood, then there will be less necessity for the practitioner to hurl at the specialist his "bucket or barrel of ovaries;" then the specialist will cease his cry against needless tinkering and dangerous procrastination; then our women will have their babies at full term, in the good old way. Until this goal is reached, the use of the knife will be found necessary in properly selected cases to relieve the suffering and save the lives of these unfortunate women with diseases, the result of the above-mentioned causes.

A STUDY OF THE MEDICAL ASPECT OF FOUR RECENT CASES OF ACUTE APPENDICITIS.[1]

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MR. PRESIDENT, AND MEMBERS OF THE ONONDAGA COUNTY MEDICAL SOCIETY: As a preliminary to the study of the salient features in the four recent cases of appendicitis which it is proposed to discuss to-day, it will be necessary to give, briefly, the history of each case, from its inception to the time when surgical treatment was resorted to.

CASE I.—Mr. G. K——, aged thirty-nine, a German, of sturdy build, weighing about two hundred pounds. He worked all day July 25, 1893, at his trade, stone-cutter, doing heavy work. He had a diarrhœa, attributed to indiscreet eating, of which he made no complaint until he returned from his work in the evening. His diarrhœa continued during the night, with occasional vomiting and colicky pains.

In the morning, not being relieved, he sent for me. I found the patient in bed, and an examination showed, in addition to the above symptoms, that the pain, which had at first been indefinite in location, had become limited to the right iliac region, though it radiated, in paroxysms, from this point upward and inward toward the umbilicus, but was never intense.

Palpation revealed slight tenderness, most marked over McBurney's point, but also extending to a considerable area in every direction.

Percussion indicated an area of diminished resonance in the right iliac fossa.

His pulse was 70, of fair strength and volume, and his temperature was normal. A tentative diagnosis of appendicitis was made, and he was given an opiate and salol.

At the evening visit it was found that he had had a severe chill, lasting several minutes, which was followed by an increase in the pulse-rate and fever, with sweating. At this visit his pulse was 90, and his temperature was 100° F. He had vomited twice during the day; his bowels had moved several times, and the pain was more intense, though not constant, and the tenderness was increased. There was some tympanitis, so a saline was added to the treatment. The family were apprised of the serious nature of the disease, and were told if no decided improvement was manifested by morning, surgical measures must be resorted to.

July 27th.—Patient was seen about 10.30 A.M. He had passed a fairly comfortable night; his bowels had moved early in the morning, the stool being a watery discharge of very foul odor, but containing scarcely any fecal matter. His pulse was 100, and of diminished strength and volume; his temperature was 102° F. There was a little increase in tympanites, the abdomen being quite soft, but the pain was more marked, and the tenderness was much greater, and most exquisite over McBurney's point.

The opiate treatment was continued, and the family notified that I would bring a surgeon at the earliest possible moment in the afternoon.

At 4.30 P.M. Dr. Jacobson saw the case with me. At this time the temperature had fallen to 101° F., but the pulse had increased to 116, and was irritable. The local symptoms were aggravated, both pain and tenderness having increased since morning, and the abdomen was somewhat distended. It was agreed that the only hope was in an immediate operation, which was at once acceded to, and prepared for, and accomplished by six o'clock—forty-eight hours from the time he had complained of any abdominal trouble, and thirty hours after there had been any elevation of temperature or increase of pulse rate.

A general septic peritonitis and a gangrenous appendix were disclosed, the details of which will be given by the operator. Death followed about twenty hours after this operation.

CASE II.—R. H. L——, fifteen years of age, a student in Colgate Academy, Hamilton, N. Y., having a good family history and no previous abdominal trouble. He, with his society fellows, participated in a "peanut bum," on Saturday night, March 17, 1894, consuming peanuts, bananas, and soda-water, as only a fifteen-year old boy can. All went merry until Tuesday night, March 20th, when he was attacked with severe diarrhœa and vomiting, keeping him busy all the early hours of March 21st. On that day a physician was called, and placed him under treatment, evidently wavering in his diagnosis between a possible typhoid fever, which was endemic in the neighborhood of his boarding-house, and appendicitis. His temperature was 101° F., and his pulse correspondingly rapid; he had considerable pain and tenderness in the right iliac region, which was somewhat masked by a strain of the abdominal muscles, received in practice on the base-ball field. He was up and around during the day, however, and partook of the usual supper served to healthy boys.

March 22d.—The pain was considerably diminished, as well as the tenderness, and the diarrhœa and vomiting had ceased, but his temperature and pulse remained slightly above the normal.

March 23d.—He was in about the same condition, and was advised by his physicians to return home. Information was sent me that he was probably coming down with typhoid fever, a fear which was quite reasonable. At 11 P.M. he came into my office, having walked from the Central Depot with his father, who had met him at the train. After securing the above history an examination was made: The pulse was 100; temperature, $101\frac{5}{10}$° F. Complained very little of either pain or tenderness; abdomen flat and soft; palpation disclosed a point of considerable tenderness at McBurney's point, and a tumor was distinctly made out in this location, about the size and shape of a butternut. There was dulness over the descending colon, as well as over the tumor. Thinking there were more peanuts—though being positive in a diagnosis of appendicitis—a mercurial was prescribed. As the patient was suffering from acute bronchial catarrh, a sedative was also given.

March 24th.—Patient had a good night. Pulse, 100; temperature, 100° F.; had three movements of the bowels; is very hungry, but is allowed no solid food. Local symptoms unchanged. A daily improvement in every symptom was recorded until

March 28th.—At this visit his pulse was 92; temperature, 102° F. No complaint of abdominal symptoms from patient, but examination reveals an increased area of dulness, not particularly tender, and tumefaction in right iliac fossa evident to the eye; abdomen elsewhere flat and not tympanitic; bowels have not moved in two days. Closer questioning gives the added information that the patient had a "weak spell" during the afternoon, followed by free sweating. Arrangements were immediately made for consultation with a surgeon.

March 29th.—Dr. Jacobson saw the patient with me at 8.30 A.M. At that time his pulse was 90; temperature, $99\frac{4}{10}$° F. He had passed a pretty good night; tumefaction more noticeable even than yesterday, and the tumor distinct and larger. It was agreed that an immediate operation was imperative. Arrangements

[1] Read before the Onondaga County Medical Society, May 8, 1894.

were accordingly made and abdominal section was done at 3 P.M, the tenth day after onset of symptoms. The appendix was gangrenous throughout its entire length, and was embedded in a large blood-clot, under which were about two ounces of foul pus. The patient made an uninterrupted recovery and is now about the house.

Case III.—P. W. G——, aged thirty-one, Scotchman by birth; tall and slim Of good family and personal history. Went to Toronto, Canada. March 28, 1894, at 3 P.M. was attacked with cramps in the bowels, and with vomiting, but no diarrhœa, which he attributed to the drinking-water. He returned to Syracuse by the earliest train, and called me the following evening.

In addition to the above history, an examination revealed considerable fulness of the abdomen; no tumor or tumefaction, but distinct tenderness at McBurney's point. His pulse was 100, and his temperature $101\frac{5}{10}$° F. His bowels had not moved in two days so he was given sulphate of magnesia and carbonate of magnesia, in moderate doses, in peppermint-water every hour until his bowels moved freely, and Tully powder sufficient to control excess of pain.

March 30th.—Pulse, 92; temperature, $99\frac{5}{10}$° F.; bowels had moved three times; abdomen flat, and no pain except on motion. Tenderness is marked, and dulness in the right iliac fossa was detected, but no distinct tumor. At 10 P.M. Dr. Jacobson was called in consultation. Pulse, 84; temperature, 101° F.; symptoms unchanged, but, in addition to slight dulness, could detect slight tumor in the region of the appendix. It was agreed to continue conservative treatment, but to be ready for operation at any moment.

March 31st.—Pulse, 82; temperature, 99° F., in the morning, and pulse, 80; temperature, $98\frac{5}{10}$° F., in the evening, with improvement of all the symptoms.

April 1st.—Pulse, 72; temperature, $98\frac{4}{10}$° F. No pain, little tenderness, but tumor distinct.

April 2d.—Pulse, 70; temperature, 99° F. All symptoms favorable.

April 3d.—Pulse, 80; temperature, 101° F. Bowels moved twice, and had twinges of pain previous to each movement Tumor somewhat increased.

April 4th.—Pulse, 90; temperature, $100\frac{8}{10}$° F.; respiration, 22. Considerable pain during the night; tumor increased in size, and tumefaction evident on extension of right leg. Dr. Jacobson was called and an operation agreed upon, which was performed at 3 P.M. A post-cæcal gangrenous appendix, surrounded by about an ounce of vile pus, was removed; and the patient is now convalescent.

Case IV.—W. B——, aged twenty-five, English by birth; an engraver. Was seized with pain in the stomach and vomiting late in the evening of April 24th. The pain persisting and the vomiting, bilious in character, continuing, he sent for medical aid in the afternoon, and was seen by Dr. Jacobson at 3 30 P.M Examination showed that his pulse was 105; temperature, $101\frac{3}{4}$° F.; abdomen dull on both sides over a great portion of the area below the umbilicus; sensitive at various points, and most tender to pressure about an inch below McBurney's point; tongue, dry in centre and brown; pains paroxysmal. Salol, phenacetin, and pepsin were prescribed. At 11 P.M. patient was seen again; he had had no severe pain since afternoon visit and had not vomited; pulse, 90; temperature, 100° F.; tongue more moist; abdomen softer; dulness limited to cæcum; marked tenderness on pressure in right iliac fossa. He was prescribed, hourly, fifteen grains of sulphate of magnesia and five grains of carbonate of magnesia.

April 26th.—Patient had rested so well that he had little medicine; pulse, 72; temperature, $98\frac{4}{10}$° F.; abdomen a little more tympanitic; tongue moist, slightly furred; no changes in dulness; diminished tenderness. Saline mixtures to be continued. At 6.30 P.M., pulse, 80; temperature, $99\frac{2}{10}$° F. Patient had vomited once during the day; local symptoms and signs unchanged; bowels not having responded to salines, enema was advised.

April 27th.—Passed a comfortable night; vomited once on getting up to help himself to milk; bowels had moved very freely; tongue a little dry; pulse, 80; temperature, $99\frac{2}{10}$° F.; local symptoms unchanged. At 10.30 P.M. I saw the patient in consultation with Dr. Jacobson. Pulse, 72; temperature, $99\frac{1}{10}$° F.; abdomen flat and soft; dulness in limited area in right iliac fossa below the line from the umbilicus to the anterior superior spinous process, and tenderness confined to this area. As his general symptoms had improved since an earlier evening visit, and the local symptoms had not progressed, it was agreed to send the patient to the hospital early in the following morning and meet there in consultation, prepared for operation, if indicated.

April 29th, 8.30 A.M.—Patient was seen in St. Joseph's Hospital. He had passed a restless night, but without severe pain; area of dulness was increased very slightly, and degree of tenderness was heightened; pulse, 68; temperature, $100\frac{2}{10}$° F. Because of the increase in local manifestations it was agreed that the operation should be done at once. An intensely congested, mahogany-colored appendix and mesentery of unusual development, with points of degeneration, evidently on the rapid road to complete tissue-death, were removed; and this patient is now on a fair way to recovery.

Four cases are very few from which to make deductions of absolute value, but when they are fair representatives of all forms of acute septic appendicitis which have come under our observation in the past, the total number of which is considerable, they are worthy of consideration.

The physician is the person who, ordinarily, is first called to see the patient suffering from appendicitis. The existence of bellyache is not commonly associated with the thought of the surgeon and his knife in the mind of the average man. Accordingly, an ability to make an early diagnosis and to appreciate the relative value of the symptoms and physical signs is, for the physician, of the utmost importance; but of still greater importance is the ability not only to determine the proper medical aid to be extended, but to decide when surgical interference is to be invoked.

Let us first consider the early symptoms presented in these cases. They were abdominal pain and tenderness, vomiting, diarrhœa or constipation, fever, and an accelerated pulse.

The abdominal pain was the initial symptom in each case. It preceded the vomiting, the diarrhœa, and the consciousness of tenderness, and the fever and the increase of pulse-rate followed in its train. It was not distinctly localized at first in any case, but in from twelve to twenty-four hours it was distinctly felt by the patient to be most intense in the right iliac region, and, when paroxysmal, to radiate thence. The pain varies in character. It may be paroxysmal and intense, suggesting colic; or it may be dull and constant. In either case it was always exaggerated by motion and by pressure, so that the patient assumed a position protecting the affected parts to the greatest possible extent. In walking, he bends forward; in bed, he is easiest lying on the right side with his knees drawn up. Pain is a common symptom of all abdominal disturbances; but pain, at first vaguely defined, but soon distinctly localized in the region of the appendix and increased by motion, is of itself almost pathognomonic, and could exist in acute diseases in only a very few other pathological conditions, which fortunately have distinctive symptoms of their own, like invagination, volvulus, and stercoral typhlitis.

Tenderness always accompanies pain. There may be several sensitive places in the abdomen, as observed in one of these cases, but careful palpation, with a single finger-tip, will locate the point of greatest tenderness exactly over the origin of the appendix. McBurney has rendered us the greatest service in giving us an exact point at which the appendix originates in all normal

cases, a point one and a half to two inches from the anterior superior spinous process of the ilium, on a line drawn from it to the umbilicus. In the fourth case reported, the point of most exquisite tenderness was located nearly an inch below this line, but the short, thick, inflamed appendix was disengaged from exactly the region diagnosed. In my experience this is the only instance of displacement of the appendix, even to so slight an extent; but there are many cases recorded where the appendix has occupied an unusual position, as under the right lobe of the liver and even in the left iliac fossa.

Dr. Edebohls, at the last meeting of the New York State Medical Society, read a paper demonstrating the possibility of palpating the appendix, in every case where the abdominal wall is not too thick, by deep pressure from above with counter-pressure from the posterior wall of the abdomen, in a line from the umbilicus to the spine of the ilium. I do not question but that a practised observer could attain such precision, but in cases of acute appendicitis the procedure is unwarrantable, except in the very inception of the disease, as the force necessary to compress the abdominal tissues against the posterior abdominal wall would be sufficient to rupture a degenerated appendix.

Vomiting was a symptom present in each of the cases. Of itself it is a symptom of little value; but, in connection with those already mentioned, aids in the formation of a diagnosis. The vomiting in all the cases which I have seen has been most severe in those following gross indiscretion at the table. It has seemed to me possible, that just as vomiting mechanically empties the stomach and the liver, and even the trachea and large bronchi, so it might mechanically force some of the contents of the cæcum into the appendix and thus originate conditions of overdistention, giving rise to strangulation and inflammation of this organ, particularly where colonies of *bacilli coli communis*, virulently active in fermenting intestinal contents, were forced through the so-called valve of the appendix. But I do not know that any such origin of appendicitis has been demonstrated or suggested.

In two of our cases diarrhœa was marked, and in these two there was a distinct history of most indiscreet ingestion of a large amount of food difficult of digestion. My other cases bear out this observation. In two, constipation was marked, so that neither diarrhœa nor constipation can be considered as diagnostic of this disease. Either condition seems to depend on other factors than the existence of an inflamed appendix.

Fever was not an initial symptom in any of these cases, though it developed in each case sooner or later, and was, in none of them, a symptom upon which reliance could be placed, either for early diagnosis or for prognosis. In the first case, where septic peritonitis had developed within twenty-four hours, the temperature was lower on the day of the operation than on the day before.

In the fourth case, the temperature and the pulse were both near the normal at the time of the operation and had not been high at any period. In both of these cases there was no attempt at walling off the seat of the inflam matory action from the rest of the abdomen. In the second and third cases the temperature, at first elevated, returned to the normal with the amelioration of the primary symptoms, and became gradually elevated with the development of the tumor. In both of these cases an abscess cavity was established, more or less perfectly, protecting the adjacent tissues from infection. With the establishment of septic peritonitis, in the first case, the pulse became more rapid and of wretched character, and at the same time the temperature fell; a similar phenomenon has been observed in four other cases of fulminating appendicitis with very rapid general infection that have come under my notice.

For a primary diagnosis I regard the pulse and the temperature as of very little importance. On the other hand, the increased pulse rate and the elevation of temperature attending the development of the tumor, seem to indicate the formation of a perityphlitic abscess; and a greatly increased pulse-rate, with lessened volume and strength, and with a falling temperature, is suggestive of general septic infection.

To sum up: Right-sided abdominal pain, increased by motion and by pressure, with tenderness on point pressure most exquisite over the origin of the appendix, with vomiting, and some disturbance of the circulation and temperature, coming on suddenly in a person previously healthy, are sufficient to establish a diagnosis of acute appendicitis.

The discussion of the prognosis and the indication for surgical treatment I shall leave to my collaborator.

It remains for the physician to say when the surgeon shall be called in consultation. To this, the only answer must be, so soon as a diagnosis is made. I know of no absolute signs that unequivocally indicate the moment when medical aid is of no further utility, and when, to save the life of the patient, surgery must be resorted to. The surgeon should be associated with the physician from the outset, and should share with him the responsibility of the case, and to his experience and judgment must be referred the question of the necessity of any operation and the time when it should be made.

Concerning the medical treatment, little need be said. Locally, cold alone is appropriate in the beginning, and is best applied by the coil. If tumor is forming and is slow in development, heat may be of utility in hastening the process. This was exhibited in the second case, seen four days after its inception, and operated on the tenth day.

Internally, opium is, in my opinion, by far the most appropriate in all cases where it agrees; and no fears of "masking the symptoms," as some surgeons put it, should be entertained. This drug gives physiological rest; and, more than that, it controls the inflammatory process, actually diminishing the calibre of the arterioles of the mesentery and peritoneum better than any other drug yet used.

If the colon be filled with fecal matter, a mild saline, just sufficient to remove this cause of embarrassment, is appropriate, and for the purpose I know of no prescription superior to the one used in our cases, namely, fifteen grains of sulphate of magnesia, with five grains of the carbonate of magnesia, in half an ounce of peppermint-water every hour until the desired result is obtained. This mixture is well borne by the stomach, and is efficient after a few doses. The diminution of the abdominal contents, from the emptying of the gut of fecal matter and of gas, was most marked in the cases where it had been used, and, at the time of the operation, the freedom from interference of inflated intestines much facilitated the operation.

If general peritonitis develop, possibly the saline treatment alone is more scientific; but of this I confess I am not yet thoroughly convinced. In such an event I have yet to see a case which has recovered from either medical or surgical treatment, however skilfully it may have been applied.

Salol is of great value, as in so many intestinal diseases, by its efficiency in controlling fermentative processes in the intestinal canal.

The diet should be entirely restricted to fluids; and, so long as vomiting continues, nothing but barley-water or oatmeal-water or ice-water should be permitted. With the amelioration of the primary symptoms diluted milk, with a tablespoonful of lime-water to each glass, may be allowed.

If these cases, as well as all the others I have seen, teach anything, it is that an early diagnosis, the timely association of a surgeon in the management of the case, and the harmonious working together of the physician and surgeon will save many valuable lives that otherwise might be lost to the world.

FOUR RECENT CASES OF ACUTE APPENDICITIS, CONSIDERED FROM THEIR SURGICAL ASPECT.

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BEFORE entering upon a consideration of the surgical questions in the cases under discussion, permit me to complete their records as given by Dr. Heffron.

CASE I.—G. K——, seen at 4.30 P.M., July 27, 1893. Although the temperature had fallen since the morning from 102.5° to 101° F., the increase in the pulse-rate from 100 to 116, and the marked aggravation of local signs indicated rapid progress of the inflammatory process. It was therefore decided to operate at once. The preparation was hastily made. Despite anæsthesia the patient strained constantly throughout the operation. His chest was more or less filled with mucus, and respiration in consequence impeded.

A straight incision along the dextral border of the rectus muscle was made, about three inches in length. Immediately upon incising the peritoneum there was a profuse discharge of sero-pus. Upon the deeply injected intestines, at various points, inflammatory deposits were present. As soon as the peritoneal discharge was removed, the appendix was sought for and easily found. Readily separated from its slender adhesions, it was seen to be angry, swollen, and perforated, and so gangrenous that in the attempt to seize and draw it up the forceps broke off its end. Liquid fæces exuded from its perforations. It was cut off close to the cæcum, the stump cauterized with pure carbolic acid, and the presenting surfaces irrigated with a saline solution. A glass drainage-tube was carried down to the stump, and about it iodoform gauze was introduced, and the ordinary surgical dressing applied.

At midnight the patient was seen again. His temperature had gone to 102.8° F.; the pulse was so feeble that it could hardly be counted. A great amount of bronchial secretion was present. The lips were blue, the extremities cold and discolored, respirations were frequent. The surface dressings were badly stained and therefore changed, and strychnia, digitalin and nitro glycerine administered hypodermically.

At nine o'clock in the morning the patient was found to be bright, and reported himself as feeling materially better. His pulse, however, was not improved; temperature, 104° F.; lessened bronchial secretion permitted freer breathing, the abdomen was distended, tongue dry, urine had not been voided. From this hour the patient steadily failed, the pulse soon became imperceptible, the patient collapsed, and death resulted at 1.30 P.M.

Dr. May made a bacteriological examination of the appendix and reported that it presented a pure culture of the bacillus coli communis.

CASE II.—R. H. L——. Seen on the tenth day of his attack at 9 A.M., March 29, 1894, temperature was 99.5° F., pulse, 90. The local manifestations were entirely out of proportion to the mildness of the constitutional one. The right leg and thigh were flexed. Upon extending the extremity the right side of the abdomen became immediately prominent. An area of dulness present in the right iliac fossa, reached within one-half of the median line. A localized tumor was evident; fluctuation could be made out. Diagnosis of appendicicular abscess was made, and operation advised.

At 3 P.M. an oblique incision was made over the outer border of the tumor, that is, about an inch from the brim of the pelvis, its centre opposite the anterior superior spinous process. The peritoneum when reached was found to be tense. Upon incising the tumor, pus and blood were discharged. The abscess cavity was thoroughly walled off. It was occupied by an infectious thrombus, in the centre of which was the gangrenous appendix, collapsed and in a state of sphacelus. The slightest effort to remove the blood-clot awakened profuse bleeding. The cavity was therefore irrigated with a hot normal saline solution and packed with iodoform gauze. Throughout the operation the patient, who was suffering from an acute bronchial catarrh, took ether so wretchedly that the anæsthesia gave us more trouble than did the operation.

Just before the operation the temperature was taken, and was found to be 101.5° F. It steadily fell to normal, at which point it was found at 10 P.M. On the following day there was a slight rise to 100.2° F., but after this it remained substantially normal. On the second day after operation, the dressing being removed from the abscess cavity, it was irrigated with a sublimate solution of 1 to 8,000. The blood-clot was easily washed away and no further bleeding occurred. The dead portion of the appendix separated spontaneously. April 1st its stump could be seen already covered by granulations. The entire abscess cavity cleansed itself, and five days after the operation presented nothing but a healthy granulating surface. Iodoform gauze was carried gently to the bottom, protecting the stump of the appendix, but firmly packed at the surface in order to distend the opening. Within a short time the wound was thus rendered funnel-shaped. The cavity granulated rapidly from the bottom. May 1st, it being entirely healed, an abdominal supporter was applied and the patient allowed to be up and about.

CASE III.—P. W. G——. At the visit, made late in the evening of March 30, 1894, the third day of his sickness, an examination revealed the presence of a large area of dulness in the right iliac fossa, describing a quarter of a circle, with a radius of at least three inches. Within this tumefied area we were able to recognize as more distinct a tumor located opposite the anterior superior spinous process. There had been improvement in pulse, facial expression, and general condition, although the temperature was not reduced. With this condition we felt justified in deferring the operation for the night. Dr. Heffron reported the improvement in local and general manifestations on the following day to be so decided that it seemed possible that the patient might recover without operation. I did not see him again until 10.30 A.M., April 4th, the eighth day of his sickness. The tumefaction had in the meantime entirely disappeared, and a distinct tumor, two inches in length and one and one-half in width, was present opposite the anterior superior spinous process. It reached externally to the brim of the pelvis. Temperature, 101° F.; pulse, 80. Operation was acceded to, and as soon as preparations could be completed was undertaken. An oblique incision four inches in length was made about three-quarters of an inch from the brim of the pelvis, well toward the outer border of the tumor. Upon carrying the incision downward, despite its extreme dextral location, I entered the free peritoneal cavity. The following condition was found: A loop of small intestine adherent to the cæcum was directly under the incision, both large and small intestines were of normal appearance, the tumor lay posterior to the cæcum and well against the outer border of the pelvis.

Protected by firm adhesions at this point from the general peritoneal cavity, it was apparent that it would be both difficult and hazardous to enter the abscess cavity through the abdominal route. The incision into the peritoneum was therefore closed and the transversalis fascia sutured over it. Through the same surface incision I now dissected closely to the brim of the pelvis, until I reached a point deep enough to feel the tumor behind the cæcum. In doing this, at the upper angle of the incision, the omentum came into view. Surrounding the abscess cavity with gauze pads I incised it. It contained offensive pus, and a long, cord-like, gangrenous appendix. The pus was carefully mopped out. At the lower angle the abdominal cavity was likewise entered and protected by gauze pads. Everything being thoroughly cleansed with a 1 to 1,000 sublimate solution, the appendix was tied off as close to its base as possible. Here it was surrounded by a firm exudate. Iodoform gauze, carefully folded to prevent any ravelling, was first carried down to the bot-

tom of the wound to protect the intestines below, and then above against the omentum. Finally the cavity proper was filled. The usual surgical dressing was applied.

Temperature before operation, 101.8° F., at 10 P.M. 98 8° F.; pulse 75. The following morning, temperature 99° F.; pulse, 75; no vomiting had occurred. Catheterization was necessary the first night, but not again. The dressings were not removed until the end of the third day, at which time it was found that protective adhesions existed on all sides. The odor, however, was very strong. The skin, for an area of two inches, was found reddened and infiltrated, and upon lifting up the inner flap the muscular tissues as well as the aponeuroses, infected by the discharge, had become gangrenous. For the following four days care was required in dressing the wound. All gangrenous structures were thoroughly removed, sublimate solution, 1 to 1,000, was carefully rubbed into every nook and corner, and in this manner by April 12th all dead structures had been cleared away and the entire wound surfaces presented healthy granulations. From this period the patient progressed rapidly to a complete recovery.

Case IV.—W. B——. During the first twenty hours of his sickness he received no medical attention. At my first visit, pain, vomiting, fever, but without characteristic local manifestations, were present. In the course of seven hours marked improvement in the general symptoms occurred. Tenderness at a fixed point in the right iliac fossa appeared and continued. The fecal collection in the cæcum was cleared away by the exhibition of salines. The morning visit, on April 27th, disclosed the following condition: Temperature, 99 2° F.; pulse, 80; he had passed a comfortable night; the tenderness remained undecreased; there was no dulness. By evening, however, the patient, having passed the entire day comfortably, sleeping most of the time, exhibited a temperature of 100.6° F., and for the first time there was an area of dulness lying a little higher than the point of tenderness, not well defined but readily recognized. The disease was evidently progressing. Dr. Heffron saw him soon after with me and confirmed the diagnosis, but agreed that operation could be deferred until morning. He was taken to St. Joseph's Hospital at 8 A.M., April 28, 1894. His pulse was 68, firm and regular; temperature, 100.2° F.; tongue was moist, area of dulness increased and now about two inches in length and one in width. He was prepared for operation.

An oblique incision was made four inches in length and one inch from the anterior superior spinous process. Upon opening the peritoneal cavity, there was no discharge of serum or pus; the cæcum was readily recognized, drawn inward, and the presenting abdominal structures were covered by gauze pads wrung out of a sublimate solution. The finger recognized the appendix, which upon being lifted out was found to be deep purple in color, greatly infiltrated, with an equally thick mesentery adherent to it, throughout its entire length. Its free extremity was on the point of gangrene; upon the mesentery, beginning ulceration was evident. The entire mass was about two inches in length and one and one-half in its transverse diameter. The appendix and its mesentery were ligated separately with silk, and the few drops of pus which were extruded were caught as it was severed. Everything was carefully washed with a sublimate solution of 1 to 1,000. At no point was there evidence of adhesions. Iodoform gauze was carefully packed about the stump, walling off the omentum and intestines. The peritoneum and abdominal walls were sutured to within an inch of the lower end of the incision and the wound dressed as usual.

At the conclusion of the operation, the patient's pulse was 69, and, at 5 P.M., temperature, 98.5° F.; pulse, 68. The outer dressings were changed on the following day, but the packing in the wound was undisturbed until the fifth day. He required catheterization on the night following the operation. Temperature until the day before the change of the deeper dressings were made, reached no higher point than 100° F.; at this time, however, it was 101.2° F. The wound was carefully irrigated with a normal saline solution, cautiously dried and carefully packed with iodoform gauze. The wound cavity could be seen to be outlined by the intestines covered with a grayish layer of inflammatory exudate. It was thought advisable not to disturb the bowels until the sixth day, when they were moved by an enema. On the seventh day, three one drachm doses of Epsom salts, at intervals of four hours, were administered, and a large movement was secured, followed by two other watery discharges. The abdomen was at no time distended. General abdominal tenderness and a dry tongue were present on the day following the operation, but after this no symptoms suggesting peritoneal disturbances appeared. The patient made an uninterrupted recovery.

Section of the appendix disclosed the presence of pus. At its free extremity, corresponding to the site of gangrene, was an infectious thrombus. Upon bacteriological examination, Drs. May and Levy report having found a pure culture of the bacillus coli communis.

The four cases to which your attention has been invited this afternoon, present varying types of acute infectious inflammation of the appendix. The first, because of its malignant and rapidly progressive character, is described as fulminating. In the second and third, the inflammatory process reaching beyond the appendix, and invading peri appendicular structures occasioned abscess formation. In the second the pus collection was superficially placed, but in the third it was buried behind the cæcum. The fourth case, beginning probably as a catarrhal appendicitis became changed in character by the occurrence of an infectious inflammation of the blood-vessels.

What to do for a given case of appendicitis, at once becomes a most serious question. Which cases will progress happily without surgical aid and which can be saved by timely operation, are the questions, the answer to which requires not only rare diagnostic acumen, but, in their management, careful medical and energetic yet painstaking surgical intervention.

I am less ready than I was eighteen months ago to maintain that much the larger percentage recover by medical treatment alone. Every case of appendicitis should be seen during its first twenty-four hours so frequently that the physician can satisfy himself of either decided improvement in both local and general manifestations or detect any disposition to progression. The wise course is that, from the outset, the case should be watched by both physician and surgeon. Of the two, I believe more stress should be placed upon the local than the constitutional manifestations. If there be equal disappearance of both general and local symptoms during this period, there is no need to feel that surgical aid is to be invoked. Aside from the careful administration of salines and intestinal antiseptics, the less medicine prescribed for the patient, the better. Nothing should be administered which in any way is to mask the symptoms; the exhibition of opiates, by relieving the pain, lulls the patient into a feeling of security and prevents his proper conception of the degree of his suffering.

The only safe rule to follow is, that evidence of continued progression at the end of twenty-four to thirty six hours justifies and indeed calls for operation. Even the cases remaining stationary during this period must be viewed with suspicion. The cases presented in these papers indicate very clearly that there may be mitigation of all and complete disappearance of most of the symptoms and yet during the period of their subsidence the diseased process has gone on steadily. The pulse may become lowered, the temperature sink to normal, and all this time gangrene may be advancing or ulceration imminent. With improvement in constitutional symptoms, the local signs demand the closest attention. An increase of tenderness, the appearance of tumefaction, the development of a tumor, mean much more than any

variation in pulse and temperature, or the feelings of the patient. The first evidence of dulness in the fourth case, despite apparent general improvement, was the signal for operative intervention.

When the patient is overwhelmed by an infectious inflammation as virulent as that presented in the first case, or when septic peritonitis has manifested itself as a later complication, the hope of aid by medical means is generally abandoned. But under these circumstances the surgeon's art is equally powerless. It is in the other group of acute cases, with less violent manifestations, that it becomes a question of vital moment to decide when the opportune time for operation has arrived.

Operations are described as early and late. An early operation implies its performance during the period in which the inflammation is still limited to the appendix. The element of time is not the only consideration in determining whether or not the operation be early. If during the first twenty four hours of an appendicular inflammation the infection has spread through the lymph-vessels of an unperforated organ, or has extended from one disorganized and involved the entire peritoneal cavity, it is evident that the operation then performed is early in point of time, but too late to avert wide spread and probably fatal septic inflammation. On the other hand, an operation performed on the third day, as in our last case, while not done upon as early a day, was still timely, for by it we did no doubt avert septic peritonitis.

Late operations are those performed after abscess formation has occurred, walled off by firm adhesions; the mere incision of these abscesses is a comparatively simple operation. But during the period of their formation it is often a matter of great difficulty to determine whether the patient's chances may not be improved by delaying operation until nature has rendered her fullest assistance. There is a group of cases seen from the third to the fifth day of sickness, when, as Richardson puts it, we may hesitate whether we may not be too late for an early operation and too early for a late one. Done at this period, he believes no operation in surgery more difficult than the removal of the appendix without infecting the general peritoneal cavity. This situation presented itself in our third case. At the end of the third day a tumor was beginning to form in the midst of the tumefied area. An operation done at this time would have been an entirely different procedure from the one undertaken on the eighth day.

To perform a radical operation, the rule must be, operate early. That this injunction adds greatly to the security of the patient, is apparent in studying the results obtained by Fowler in 127 cases operated on by him. Of 58 operated on during the first three days, eighty-three per cent. recovered; of 9 on the fourth day, sixty-six per cent.; of 26 on the fifth and sixth days, fifty-eight per cent.; of 18 on the seventh and eight days, fifty per cent.; while of 9 on the ninth and tenth days, thirty-three per cent.

The great fatality attending his late operations is not in accord with my experience. The operator probably sought to do more than give vent to the contents of the appendicular abscess, and by breaking down the protective barriers, infection gained admission into the peritoneal cavity.

Increasing experience adds to the operator's ability to deal with these cases. Preparations for the operation must be hurriedly made. These cannot be as thorough as in an ordinary laparotomy. The operator may be handicapped by the facilities at his disposal. The surfaces purified as well as possible, the site of his incision is selected according to the period at which the operation is undertaken. The length of the incision should be sufficient to afford the most free access to all diseased surfaces. Dealing with an acute infectious inflammation, nothing is calculated to produce more serious consequences than an inadequate incision, which must prevent both the protection necessary for the abdominal viscera and the delicacy of manipulation absolutely required. In our first case the incision was vertical, along the outer border of the rectus muscle. This was indicated because the acuteness of the attack foretold that we would be obliged to enter the free peritoneal cavity. Evidence of septic peritonitis at once encountered, presented the most dubious outlook for the patient.

The steps taken in the course of the operation have been indicated in the history. A glass drainage-tube was used in the first case. In the operations which I have performed since that time, I have used only gauze drainage, and have reason to believe that this procedure is much the wiser one. The abdominal cavity was irrigated with a saline solution. Although this receives the strong endorsement of most of the surgeons it was futile with us. The Germans say that "Spuelerei ist Spielerei"—that is to say, "irrigation is child's play."

Of thirty-two cases in which general peritonitis was encountered by Fowler, not a single recovery occurred. Others claim to have been more fortunate. This has, however, been my experience in three cases in which I encountered it in operating.

In Case IV., in which likewise an early operation was undertaken, we were fortunate enough to secure the removal of the appendix with its mesentery, the one about to become gangrenous and the other on the verge of ulceration, before further infection had been awakened. No adhesions were present, but the greatest care was taken to protect by gauze pads all visceral contact with any infectious matter. The appendix and its mesentery after ligation presented a stump so broad and infiltrated that it was impossible to undertake what in chronic cases is an ideal step, namely, to dissect up a cuff of the peritoneal investment, invert the remainder of the stump, and secure the serous coat over it by a Lembert suture. We were obliged to content ourselves with its purification by means of the sublimate solution and the thermo-cautery.

Iodoform gauze was carried into the wound. The four strips carefully placed around the stump were infolded in such a manner as to prevent a free edge of the gauze presenting itself at any point. This is essential, that none of the threads may adhere to the abdominal structures, and greatly facilitates the removal of the packing. Allowed to remain for four or five days, nature throws about the gauze a protective wall. This usually averts future general infection.

The second case was of all the most simple, but exhibits a pathologic peculiarity, which as far as I can learn is quite unique. The destructive process had evidently reached the vascular supply of the appendix. The vermiform process, collapsed and gangrenous, was found imbedded in an infectious blood-clot. The surgical steps taken with this patient have been amply justified in his very rapid recovery. The wound quickly cleansed itself, and in fact it has never been my experience to see a cavity fill up so quickly as did this. Great aid to its accomplishment was the manner in which the gauze was inserted. At each dressing, by carefully carrying it to the bottom of the wound, lightly placing it here, and then distending the upper portion as much as possible by firm packing, we secured within a few days a funnel-shaped wound, sloping gently from the sides to the centre, and gave it at the same time the largest possible area for granulation.

Case III. presented a most serious surgical problem. The incision was made well toward the pelvic brim, inasmuch as it was recognized that the tumor could thus be more easily reached. In taking this step, we disregarded the usual instructions given, which are to make the incision over the most prominent portion of the tumor. This was also done in Case II. It seems to me wiser in performing a late operation to attempt, if possible, to establish an extra peritoneal route. This is accomplished better by making the incision as far outward as possible, rather than over the most prominent portion of the tumor.

After entering the peritoneal cavity, two courses were

left open to us. Good surgeons state that with post-cæcal abscess, it is sometimes necessary to reach it by the abdominal route and to drain through the unimplicated intestinal structures. Aside from the impossibility of securing drainage through an up hill channel, the virulent infection which manifested itself within a few days after the operation in this case and produced such destructive gangrene of the abdominal walls, I believe shows the wisdom of the course pursued. Such intense infection could not have been withstood by the intestines, and must have produced a rapidly fatal spreading peritonitis. On the other hand, closure of the peritoneum and the transversalis fascia over it, permitted us, by means of another incision through the muscular structures, to reach the brim of the pelvis, and by careful dissection the abscess was exposed and entered through its outer wall. Even here we could not avoid exposing the omentum above and the intestines below. After three days, however, protective adhesions sealed up the extremities of the abscess cavity and free drainage was permitted. More than this, the removal of all gangrenous structures was made possible. The appendix was readily exposed and removed. Again the use of iodoform gauze, placed after the manner described, secured not only limitation of the abscess cavity, but also the desired funnel-shaped wound.

The recommendation to enter these abscesses by incision through the rectum, it is evident could not have yielded as satisfactory a result. The fear that extra-peritoneal incision in the late cases may not be sufficiently radical, because of the possible existence of multiple abscesses, is, I believe, no longer regarded as well grounded. These rarely, if ever, occur late, although frequently present early. In both of the cases reported the sudden recurrence of fever indicated to the medical attendant that the opportune moment for operation had arrived.

The importance of the surgical attention required by these cases after operation is not sufficiently appreciated. I esteem it the duty of the surgeon to personally superintend the change of dressings until there is no further possibility of infection. This can be done many times only at a great sacrifice of time, but the best interests of the patient demand it.

It must be evident that the three cases which have recovered by operation could none of them have been saved by other than surgical intervention. In the fulminating cases complicated early by septic peritonitis, the prognosis is almost hopeless. Where this complication appears at a later period, a gloomy termination is likewise to be feared. I feel confident that twenty four hours later this would have been the situation in Case IV.

With a clearer conception of the nature of these infectious inflammations and the improving technique, largely the work of American surgeons, the percentage of recoveries will probably increase in the future, if operation be done sufficiently early to anticipate the frightful results of microbic invasion. I regret that in all of the four cases bacteriological examinations were not made, but in two the facilities for the same were not at hand.

The increasing importance given each year to the surgical treatment of infectious appendicitis may be regarded by some as uncalled for and unjustifiable. From my standpoint, however, it is directly in the line of conservative surgery. We remove a part not essential to the animal economy, but thereby we have saved life.

Laws Relating to the Practice of Pharmacy.—The Agricultural Department in Washington has published a report upon the laws regarding pharmaceutical practice in the different States and Territories of the Union. It shows that there are no laws on the subject in Idaho, Indiana, Montana, Nevada, Arizona, and the Indian Territory. In Maryland, there is a law which applies, however, only to the city of Baltimore. The compilation is based on reports made by the various State pharmaceutical associations.

THE THYROID TREATMENT OF PSORIASIS, AND OTHER SKIN DISEASES.

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SINCE Davies and Bramwell reported their remarkable results following the use of thyroid preparations in psoriasis and some other diseases of the skin, the method has been perhaps somewhat widely employed, though but comparatively few reports have been published. Below I give briefly the histories of nine cases of psoriasis that I have had under this treatment for varying periods[1] followed by a short summary of previously reported cases.

CASE I.—Male, aged twenty six; disease of three years' standing, with recurrent attacks; longest period of exemption was one month. Eruption in large and small patches of general distribution. General condition fair. Temperature before treatment was 98⅘° F. Doses of glycerine extract (gr. xxiv. to ʒ j.)[2] rose from 9 to 15 drops daily, in three divided doses. Highest temperature during treatment was 100° F. After two or three days' treatment, the irritation was allayed. Complained of pain in joints. Treatment continued for two weeks. No improvement.

CASE II.—Male, aged thirty six; seven months' standing; small spots general in distribution; very irritable. Temperature before treatment was 100⅛° F. Dose of extract was 9 to 18 drops daily. During treatment temperature varied from 97 ½° to 98⅛° F. Irritation much lessened. General condition improved. Marked sheep odor to perspiration. Treatment continued for five weeks. No improvement.

CASE III.—Female, aged thirty nine; eruption for two and one half years, in spots over body with exception of face, neck, and chest. General condition good. Temperature before treatment, 99° F. There was considerable hypertrophy of thyroid gland. Dose of extract was 15 to 40 drops a day. Temperature during treatment, 98⅘° F. Irritation allayed. Duration of treatment was six weeks. No improvement, and even grew worse.

CASE IV.—Male, aged twenty-five; two years' standing, but disappears in summer; small spots upon arms and chest. General condition poor. Temperature before treatment was 98⅗° F. Daily amount of extract, 15 to 45 drops. During treatment temperature between 97° and 97½° F. Skin between spots much softened. Irritation lessened. Pain in arm. General condition improved. Duration of treatment was eight weeks. No improvement.

CASE V.—Male, aged forty-six; eruption for ten years, severe and general. General condition poor. Temperature before treatment, 99½° F. Daily amount of extract was from 15 to 36 drops. Temperature during treatment between 97° and 99° F. Skin between patches became soft and velvety. Irritation lessened. Sheep odor very pronounced. General condition improved. Treatment continued for twelve weeks, with one interruption of two weeks. Eruption much improved.

CASE VI.—Male, aged fifty; eruption for twenty years, and is general and severe. General condition poor. Temperature before treatment, 98½° F. Daily amount of extract varied from 15 to 75 drops a day. Temperature during treatment ranged from 97⅘° to 100° F. Intercurrent attack of facial erysipelas and later of cellulitis of leg, from external infection. Sheep odor very marked. Skin not affected by disease became very soft and smooth. Pains in joints. Treatment continued for eleven weeks. Very marked improvement.

CASE VII.—Female, aged thirty; disease of ten years' standing; small spots upon upper and lower extremities and upon chest. General health is fair. Tem-

[1] These cases were treated at the Out-Patient Department of the Roosevelt Hospital with the kind permission of Dr. Frank Hartley, the Attending Surgeon.

[2] MEDICAL RECORD, June 17, 1893.

perature before treatment was 100½° F. Daily amount was from 15 to 60 drops. Temperature during treatment varied from 97° to 99⅘° F. Irritation very much allayed. Skin not affected became soft and smooth. Treatment for fourteen weeks. No improvement.

Case VIII.—Female, aged thirty; two years' standing, not severe but general. Temperature before treatment, 98⅘° F. Daily amount was 10 to 30 drops. Temperature during treatment, 98⅘° F. Treatment continued for three and a half weeks. No improvement.

Case IX.—Female, aged twenty-three; disease of two years' duration, and upon legs and thighs. General condition fair. Disease persisted throughout a recent pregnancy. Temperature before treatment, 99° F. Daily amount taken was from 15 to 30 drops. Temperature during treatment varied from 98⅘° to 98⅘° F. Irritation not lessened. Pain in back. Duration of treatment was five weeks. No improvement; grew much worse.

We have here nine cases of psoriasis, in which improvement has been noted in only two, and in these two the response to the treatment has been very slow and not distinctly progressive. It may be objected that in some of these cases the treatment has been of short duration, but where cures have been reported the improvement became manifest very early. That the thyroid has a beneficial effect upon the skin in myxœdema is most certain, and indeed it is equally certain that in other conditions such an effect is produced, for in all the above cases the skin between the patches or spots of the eruption became soft and smooth. The thyroid extract has a very profound effect upon general nutrition, and perhaps especially upon the skin, and to this is due the changes noted. I have been struck in the above cases with the absence of a rise in temperature following the treatment, for in most of the cases the temperature has fallen to the subnormal and remained there, the fall roughly being in proportion to the dose. In some the rheumatic pains, frequently noted during thyroid administration, were present and complained of. In many of the cases there was a marked and unpleasant odor of mutton or lamb to the perspiration.

Below I give a short table of the cases of psoriasis treated by thyroid, the reports of which have already appeared:

Reporter and Reference.	Number of Cases.	Cured.	Improved.	Not Improved.	Aggravated.	Average Daily Dose.	Duration of Treatment.
Davies: Brit. Jour. Derm., 1893, v. 257.	2	2	..	..	..	Tabloids, gr. v.	6 wks. and 3 mos.
B. Bramwell: Brit Med. Jour., 1893, ii. 933.	6	2	..	2	2	Extract, ♏ xv.	2 to 3 mos.
L. Phillips: Brit. Med. Jour., 1893, ii. 1152.	2	..	..	2	..	Tabloids, gr. xxx. Extract, ♏ x.–xv.	2 and 3 mos.
T. Jones: Brit. Med. Jour., 1893, ii. 1424.	1	..	..	..	1	Tabloids, gr. xv.–xx.	23 days.
B. Squire: Brit. Med. Jour., 1894, i. 13.	2	..	..	2	..	Extract, ♏ xx.	19 and 31 days.
J. F. G. Dill: Lancet, London, 1894, i. 19.	4	1	2	..	1	Tabloids, gr. xv.	1 month.
P. Abraham: Lancet, London, 1894, i. 94.	49	..	18[1]	16	15	Tabloids, gr. xv.	
W. Anderson: Lancet, London, 1894, i. 94.	1	..	..	1	..	.....	3 weeks.
John Gordon: Brit. Med. Jour., 1894, i. 186.	1[2]	1	..	..	..	Extract, ♏ xx.	7 weeks.

[1] Eleven of these improved cases received other treatment, and should therefore be eliminated in drawing conclusions.
[2] Syphilitic psoriasis, no other treatment.

We have left before us, then, including my own cases just reported, 77 cases of psoriasis which have been treated by thyroid preparations. Of these in six, or about eight per cent., the treatment has been followed by a cure. Twenty-two have been improved, but of these we must deduct the 11 cases of Abraham's which received also other treatment, and then we have 66 cases treated, with 17, or twenty-five per cent., improved. Of the 49 cases which were not benefited by the treatment, 21 grew distinctly worse.

Other diseases of the skin than psoriasis, and the re ported results are no more encouraging:

Davis: Ichthyosis, one case, improved; chronic eczema, one, improved.

Phillips: Eczema, one, no result; xeroderma, one, marked improvement.

Dill: Acne rosacea, one, no result.

Abraham: Lichen planus, 5 cases—3 improved with other treatment combined. Eczema; 7 cases—3 improved, other treatment also. Chronic urticaria, 2 cases, both grew worse. Prurigo senilis, 1 case—no result. A case of "peculiar papular eruption," 1 case—improved, other treatment. Lupus, 5 cases, other treatment also, improvement.

While then we know that in myxœdema, and in other conditions also, the administration of thyroid preparations is followed by marked changes in the skin, rendering it soft and smooth and moist, we must look upon these changes as merely nutritive, and while possibly in some cases such changes, if more thoroughly understood, could be used as an aid in therapeutics, I think we have little reason to believe that thyroid extract is in any direct way curative of any real disease of the skin or its appendages.

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THE MANAGEMENT OF ABORTION.[1]

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The main object of a paper to be read before a society is to furnish material for discussion. With this in view it will be my object not to present an exhaustive discourse, nor an opinion of writers. I wish to present for your consideration and discussion such a method of treatment as I have followed for a number of years, and with what I consider very good results. How important this matter is to me will be shown when I tell you that I was called upon lately to treat five septic abortions in a week. I would divide the management of abortion into two parts: 1st. The prevention of abortion, and 2d, the management after we have once satisfied ourselves that the product of conception must be expelled.

It will be proper to touch upon the causes of abortion, since its prevention will in some measure depend on this factor. I consider it as very rare to count external injury, a jolt or jar, as a potent factor in the production of abortion.

At the outset we will understand that disease of the fœtus or chorion may produce abortion as well as disease of the mother. In this respect there is still a wide field for observation and study.

Among the diseases of the mother may be mentioned: Retroflexion of the uterus, chronic hyperplasia of the uterus, chronic endometritis, laceration of the cervix uteri, pelvic peritonitis, or rather its results, prolapse of uterus, syphilis, and chronic nephritis.

When we find a retroflexed pregnant uterus it will be necessary to replace it to its normal position with the greatest possible care and gentleness. This having been accomplished we may congratulate ourselves in having in all probability prevented an abortion. The same can be said of a complete prolapsus. When, however, the fifth month of gestation is over the uterus can no longer be replaced, and it either means death to the mother, or artificial interruption of gestation. In the other instances of which I have spoken, our treatment must be directed to the peculiar condition before conception takes place. An exception to some extent is syphilis and chronic nephritis. A lady of this town had aborted fourteen times in succession, and became mother of a living child after

[1] Read before a gathering of medical gentlemen at the house of Dr. S. Pierson, Morristown, N. J.

an operation for deep laceration of the cervix. Only the other day I was told of a woman who gave birth to a living and healthy child after having aborted six times before the third month of gestation. The patient was known to have syphilis, and was under antisyphilitic treatment for five months.

I believe that after longer observation we shall be able to discard the term habitual abortion, since we shall find a cause for all these cases. In the treatment of threatening abortion we are first confronted with the very important question: Are there still well-founded prospects of preventing an abortion or is it beyond our reach? If we have decided for the former the patient must be instructed to keep quiet on the first appearance of a bloody discharge or bearing-down pain, her lower bowel should be kept emptied, her diet a bland one, sexual intercourse stopped, and opium or cannabis indica administered.

When shall we know that our endeavors are in vain? The safest symptoms are when the cervical canal has dilated sufficiently to allow the finger to touch the ovum, or when the os internum is dilated to such a degree that the cervix and the corpus uteri shall form one cavity. We would also know that our endeavors are in vain when pieces of the decidua have been passed, or when there is a fetid discharge from the uterus. The latter is a sure symptom that some parts of the ovum have undergone necrosis and death.

As a rule an abortion is sure to take place when the patient has lost blood for a length of time in large quantities, accompanied with labor-pains. I have seen pregnancies continue, however, when the patients had one or two large hemorrhages, as well as I have known a child go to full term when there was a bloody mucous discharge for several weeks. When we feel certain that the product of conception will be cast off, then it becomes our duty to relieve the patients as soon as possible so as to prevent their undergoing the ordeal following retained secundines.

If we have reason to believe that the ovum is intact and the uterus is doing its work well, and gradually emptying itself, then we had better not be meddlesome. We can render the uterus valuable assistance in its endeavors by a large, hot vaginal douch or a tampon. A large, hot rectal injection will often be of signal value. Occasionally I was forced to assist the uterus by instrumental dilatation of the os externum, and then I used Goodell's dilator with much satisfaction.

So long as the ovum is intact, the uterus will probably have no difficulty in forcing it out, and when it lies in the cervical canal can be removed easily by the finger with a sweeping motion. At times we will be confronted by a severe hemorrhage, often of an alarming character. Here an iodoform gauze, or a clean cotton tampon will do its work well. It should be introduced through a large cylindrical, or a Sims speculum, and care be taken to plug the vagina around the cervix and os very thoroughly. If the uterus itself is to be plugged it can only be done through a Sims speculum, the patient lying on her back with the hips over the lower end of a table. The vagina and cervix should be thoroughly cleansed, the speculum introduced, and the cervix drawn down with a tenaculum forceps. A narrow pair of dressing forceps pushes a long narrow strip of gauze into the uterus until this organ is filled.

This is by all means the safest and surest remedy. I would warn against the use of all styptics on account of the great danger of sepsis. Occasionally we will succeed in delivering the ovum in toto by a combined abdominal and vaginal compression performed in the following way: Two fingers of the right hand are placed anterior to the cervix in an anteversion and posterior to the cervix in a retroversion, while the left hand seeks the uterus from the abdomen and on its posterior or anterior surface, as the case may be, makes pressure in the direction of the fingers in the vagina. When the ovum has been broken, or a finger once introduced into the uterine cavity, then an instrumental delivery with curretting of the endometrium becomes a necessity. It becomes a life-saving operation when the patient shows signs of sepsis. In these cases it is my custom to operate in the following way. The patient being under the influence of an anæsthetic, is placed in the lithotomy position on a table with the hips well down over the lower end. A Kelly perineum pad or ordinary oil cloth is placed under the patient, so that all fluids are directed to a pail or bucket below. The vulva and vagina are then thoroughly washed with soap and hot water, and disinfected with a hot solution of mercuric bichloride, 1 to 4,000. A Sims speculum is now introduced and held by an assistant, who also holds the right leg of the patient and the irrigating tube, while the left leg is held by a second assistant, who also administers the anæsthetic.

The anterior lip of the cervix is caught up with a tenaculum, or what is better, a tenaculum forceps, and drawn down somewhat so as to straighten the canal. The canal is now thoroughly dilated, if necessary, by an Ehlinger or Goodell dilator, and the cavity of the uterus thoroughly curretted with a sharp instrument, or else, if large pieces of tissue were left they should first be removed with a broad-bladed dressing forceps. There is very little danger of wounding the uterus unless sepsis is far advanced. Under these circumstances we must manipulate very carefully, for I have seen a curette pushed right through the fundus of the uterus into the peritoneal cavity. The horns and fundus must receive our especial attention in curetting, as these are the most difficult parts to clean.

During all this a constant stream of a solution of mercuric bichloride, 1 to 4,000, is poured upon the cervix. When the uterus has been thoroughly curetted the cavity is also irrigated with the same solution, preferably through a return catheter. The whole procedure of curetting and irrigating should be repeated to assure ourselves of the successful accomplishment of our object. Let me here say, that it must be done systematically; thus the anterior wall, the posterior wall, the right horn, the left horn, and the fundus are scraped in the order mentioned.

As the uterus has now been thoroughly cleansed the vagina is also irrigated. The fluid remaining in the vagina is mopped up with a piece of iodoform gauze, and a strip of the same material is laid into the cervical canal and to the fundus of the uterus for drainage. The tenaculum forceps can now be removed and the vagina loosely filled with gauze. If there is reason to fear hemorrhage, and there is none if we have removed the chorion and decidua thoroughly, it is well to fill the uterus tightly with gauze, which must be done with one long strip. In either case the gauze is removed in twenty-four hours. If the patient has no fever a vaginal douch of one per cent. solution of carbolic acid may be ordered. If she still has fever, the uterus should be irrigated again, and a strip of gauze again inserted into the cavity. Great care should be taken that the strip of gauze is not too wide, otherwise it will be the means of blocking up the uterine discharge.

Instead of reapplying the gauze, we may choose to irrigate the uterus every four hours with sterilized water, or a solution of mercuric bichloride of 1 to 10,000, until there is no more fever, or until we are satisfied that the germs have gone beyond the cavity and mucous membrane of the uterus.

From what has been said I would draw the following conclusions:

Since an abortion is a pathological and not a physiological condition, as is a birth at time, it must be treated on other principles than the latter. In many cases our interference becomes necessary because we deal with conditions which favor a retention of the secundines, as, for instance, a broken ovum, a displaced, a septic or otherwise diseased uterus. When we can foresee the probability of a retention we must use such efforts as will further its expulsion, provided it can be done by such means as will not produce injury to the mother.

In this condition, like in many others, to do a thing half is worse than not to do it at all

In a majority of cases a clean finger is the best instrument. However, if the whole ovum and decidua have not come away, then the forceps and the sharp curette find their places, the latter for thorough removal of the uterine decidua.

A temperature of 100° F., or above, is always a distinct indication for an immediate cleansing out of the uterus. The vulva, vagina, cervix, instruments, and hands should be made thoroughly aseptic before an operation is permitted.

In septic cases large, hot antiseptic intra-uterine injections should follow the cleansing out of the uterus, and the uterus should be drained by gauze. Let me also say that I have never seen any good come from ergot given previous to emptying the uterus.

THE USE OF THE RESORCIN TEST FOR THE DETECTION AND QUANTITATIVE ESTIMATION OF THE FREE HYDROCHLORIC ACID OF THE GASTRIC JUICE.[1]

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Since the chemical examination of the gastric secretion has assumed such importance in the diagnosis and treatment of diseases of the stomach, it is important that the simplest as well as the most reliable tests available should become better known. It is for this reason that the resorcin test of Boas is brought forward, and it will be the object of this paper to show that with it quite as reliable results can be obtained as with Günzburg's reagent, which, though more commonly employed, possesses certain disadvantages.

In 1888 Boas[2] first published the report of his reagent, consisting of:

Resorcin resub.	5
Sacch. alb.	3
Spiritus dilut.	100

and claimed for it an accuracy equal to that of Günzburg's phloroglucin vanillin[3] test. Boas's reagent, like Günzburg's, reacts only to free hydrochloric acid and never to organic acids. The reaction is carried out as follows: A few drops of the solution are heated gently in a porcelain dish with an equal quantity of gastric filtrate to complete evaporation; a red mirror is produced when free hydrochloric acid is present. Puriz,[4] A. Meyer,[5] and Leo[6] confirmed Boas's statements in regard to the accuracy of this test. Yet the reagent has never gained the popularity that it deserves. Stewart[7] almost habitually employs the phloroglucin test, but in the few instances in which he has resorted to the resorcin test the results have been equally satisfactory. In such excellent works as the new editions of Hoppe-Seyler's "Physiological Chemistry," and Von Jaksch's "Clinical Diagnosis," this test is not even mentioned, though far inferior tests are described.

My own observations with this reagent lead me to believe that it is not only quite as reliable for the detection of free hydrochloric acid as the phloroglucin test, but that it can be as well used for quantitative examinations as the latter, and perhaps with greater advantage. The accuracy of both tests is about the same. It varies, however, according to the various substances in solution with the hydrochloric acid. According to Leo,[1] .004 per cent. of hydrochloric acid in a purely watery solution may be detected by Günzburg's reagent, and .006 per cent. by the resorcin test, while in the presence of other compounds such as peptones, a much higher per cent. of hydrochloric acid may be remain undetected by either test. The following is taken from his tables:

Substances in Combination with the Watery Solution of HCl.	Percentage of HCl at which a Reaction May Still be Obtained.		
	Leo's $CaCl_3$ Method.	Resorcin.	Phloroglucin.
Water	0.002	0.006	0.004
Acid potassium phosphate. Acidity = $1^9/_{10}$ alkali	0.008	0.09	0.03
Albumen, 1 Albumen to 200 H_2O	0.002	0.08	0.05
Pepton, 2 per cent	0.002	0.16	0.16
Bread paste, 30 grammes to 200 c.c. H_2O	0.003	0.03	0.03
NaCl, one per cent.	0.003	0.0037	0.007
Grape sugar, 1 per cent	0.002	0.007	0.007
Starch paste, 2 per cent.	0.003	0.011	0.007

Inasmuch as certain substances, such as albuminous compounds, combine with a part of the hydrochloric acid and neutralize it, it was necessary for comparison in the above cases to obtain the absolute quantity of free HCl by a very accurate quantitative method, not relying on the quantity of the HCl which was added in the mixture. According to recent observations of Kossler[2] the most accurate method is the calcium carbonate test of Leo. From my own experiments concerning the limit of accuracy of phloroglucin and resorcin respectively, I have found the following results:

Substances in Combination with the Watery Solution of HCl.	Percentage of HCl at which a Reaction May Still be Obtained.		
	Leo's $CaCl_3$ Test.	Resorcin.	Phloroglucin.
Water	0.002	0.005	0.004
Acid potassium phosphate. Acidity = $1^9/_{10}$ alkali	0.009	0.007	0.004
Albumin, 1 Albumin to 200 H_2O	0.003	0.080	0.060
Pepton, 2 per cent	0.003	0.17	0.17
Bread paste, 30 grammes to 200 c.c. H_2O	0.003	0.04	0.04
NaCl, 1 per cent.	0.003	0.003	0.007
Grape sugar, 1 per cent	0.002	0.007	0.007
Starch paste, 2 per cent.	0.003	0.01	0.01

These experiments show that Boas's reagent is quite as sensitive as that of Günzburg, and that it may readily be employed for the detection of small quantities of HCl in place of the former reagent. In order to show that the resorcin test may also be utilized for quantitative purposes in the estimation of free hydrochloric acid, I have made a number of quantitative estimations of the free hydrochloric acid in a number of specimens of gastric juices, comparing the results obtained by Boas's and Günzburg's reagents with those of the more accurate method of Leo. The method employed for the resorcin estimation is similar to the one of Mintz,[3] when the estimation is made with phloroglucin.

The examination is made as follows: To ten c.c. of gastric filtrate $\frac{1}{10}$ normal, NaOH is added until a reaction can no longer be obtained by testing with Boas's reagent. If, for example, no reaction occurs after adding 1.3 c.c. decinormal NaOH, but a positive reaction was still present with only 1.2 c.c. of NaOH, then the amount of free HCl equals 1.25 calculated for 100 c.c. = 12.5, which multiplied by .00365 = .00456, the absolute per cent. of free hydrochloric acid in 100 c.c. of gastric

[1] From the Clinical Laboratory, College of Physicians and Surgeons, Baltimore.

[2] Boas: Ein neues Reagens für den Nachweis Freie Salzsäure in Mageninhalt. Centralbl. für Klinisch. Med., 1888, No. 45, und Diagnostik und Therapie der Magenkrankheiten, 1 Theil, S. 134.

[3] Günzburg: Neue Methode zur Nachweis freier Salzsäure im Mageninhalt. Centralb. f Klinische Med., 1887, No. 40. Günzburg's reagent consists of:

Phloroglucin	2.0
Vanillin	1.0
Alcohol absol	30.0

[4] Puriz: Ueber eine neue Quantitative Reaktion auf freie Salzsäure ein Magensaft. Centralb. für klin. Med., 1890, S. 452

[5] Meyer: Ueber die neueren und neuesten Methoden des qualitativen Nachweises freier Salzsäure im Mageninhalt. Dissert. Inaug., Berlin, 1890.

[6] Leo: Diagnostik d. Krankheiten d. Verdauungsorgane. Berlin, 1890, S. 98.

[7] Stewart: Hare's System of Therapeutics, vol. ii., pp. 897, 898.

[1] Leo: Diagnostik, S. 99.

[2] Kossler: Zeitschrift für Physiologische Chemie. Bd. xvii., Seite, 107.

[3] Mintz: Ein einfache Methode zur qualitativen Bestimmung der freien Salzsäure ein Mageninhalt. Wiener Klin. Wochenschrift, 1889, No. 20, und 1891, No. 9.

secretion. This method, like the one of Mintz, gives merely approximate but sufficiently reliable results.

Number.	Acidity determined by phenopthalein.	Per cent. free HCl according to Leo.	Per cent. free HCl according to Mintz.	Per cent. free HCl by means of Boas's reagent.
1	26	0.08665	0.08391	0.081942
2	28	0.08541	0.08121	0.07921
3	32	0.09025	0.08154	0.08916
4	42	0.13656	0.09982	0.09971
5	68	0.19027	0.18341	0.18492
6	61	0.29335	0.24721	0.24654
7	56	0.19877	0.17792	0.17243
8	72	0.21416	0.19926	0.19397
9	75	0.23591	0.22021	0.22154
10	67	0.21916	0.20987	0.20791
11	80	0.21999	0.21237	0.21827
12	30	0.09984	0.08963	0.08728
13	41	0.13142	0.12102	0.11994
14	44	0.14227	0.13212	0.13982
15	39	0.11929	0.10812	0.10927
16	80	0.28984	0.26915	0.26203
17	59	0.18824	0.14202	0.14059
18	87	0.29981	0.27536	0.27316
19	94	0.34453	0.31247	0.32242
20	46	0.15410	0.14739	0.14227

The above table shows that while neither Günzburg nor Boas's reagents give perfectly reliable figures, results sufficiently accurate for practical purposes may be obtained with either. It yet remains to show the advantages of the resorcin test over phloroglucin.

1. Phloroglucin is quite unstable and frequently decomposes when kept for some time. Boas has recognized this fact and has modified the formula thus:

℞. Phloroglucin..... 2.0
Vanillin..... 1.0
Alcohol (eighty per cent.)..... 100.0

making it more stable.

The resorcin test may be kept for years in a dark colored bottle without undergoing decomposition or in any way losing its sensitiveness.

2. Resorcin can be had at any pharmacist's, at a trifling expense, while phloroglucin-vanillin is a comparatively expensive substance which can only be purchased from the agents of the European manufacturers. I have repeatedly used with advantage filter-paper dipped in Boas's reagent and allowed to dry to make the tests, in a manner similar to the phloroglucin test-paper of Rosenheim[1] and Boas.[2]

RECENT INVESTIGATIONS OF THE THERAPEUTIC VALUE OF ORGANIC FLUIDS, ESPECIALLY SPERMINE, IN STERILIZED SOLUTIONS.[3]

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Some five years ago the eminent physiologist and neurologist, Brown Séquard, established the fact that the testicles of young animals contain chemical substances of high dynamo-genetic properties, and since then a great many scientific investigations have been made in order to reveal the character of those agents. The novelty of this discovery has led, at first, to very different criticisms, and the prevailing incredulity that anything could exist which would be of such a remarkable power as claimed by the author, rendered the majority of the profession unquestionable opponents of the new doctrine. The announcements of Brown-Séquard regarding injections of testicular juice on patients suffering from nervous and functionary debility, were ridiculed and, frequently without examination, Brown-Séquard's statements were flatly denied.

The efforts on the part of the inventor of this method could not prevent advantage being taken of some failures and septic accidents, probably due to a lack of asepsis in the preparation of the remedy, or during its application, and for quite a while his method seemed to be condemned as well by the public as by the profession.

However, reports of other experimenters became more and more encouraging, and what first had been looked upon as a worthless idea of an enthusiastic head, is to-day considered a discovery of the greatest therapeutic value. In fact the remarkable results obtained in some nervous affections, which previously were irremediable, have made the subject worthy of the most careful investigation.

In 1878 the German chemist, Phil. Schreiner, as described in the Annals of Chemistry and Pharmacology, found and analyzed in testicular juice a substance, called spermine, which, at first, by other chemists was declared identical with æthylenimin. Later, however, by the ingenious researches of Professor Alexander Poehl, in St. Petersburg, it was proven that spermine is an organic base with characteristic properties, and that it can be prepared from almost any organ, especially the various reproductive glands of animals.

Professor Poehl's first publication of these investigations in the St. Petersburg Medical Society, in 1890, was received with great interest by the Russian and German profession, and was soon followed by clinical experiments of noted medical men, who all agreed that spermine is the active principle of Brown-Séquard's fluid and, as a first-class stimulant, a therapeutic of unlimited value.

Such prominent physicians as Dr. Rotchinin and Professor Tarchanow in St. Petersburg, have reported a great number of cases treated successfully with spermine injections, some of which I would like to mention.

Case I.—Gentleman, fifty-three years of age, suffering from asthma, angina of the chest, and very low action of the heart, was treated with ten injections, after which all symptoms greatly improved. He could climb stairs without trouble.

Case II.—Another gentleman, sixty years of age, with short breath, pain in the chest, low pulse, recovered also very rapidly.

Case III.—A physician, seventy years of age, with paralysis of the right leg and arm, paralysis of right facial nerve, and aphasia, showed marked improvement after the second injection.

Case IV.—A man, sixty-five years of age, with diabetes (4.7 per cent. sugar), dizziness, general debility, so that he could not walk, was greatly benefited by the injections. The sugar was reduced to about two per cent.

From these and many other experiments, Dr. Rotchinin came to the following conclusions: The effect of spermine injections is that of a strong stimulant, and corresponds with those obtained by injections of Brown-Séquard's fluid. It has, however, several advantages over the latter. 1. No danger of local inflammation, as frequently observed after the use of Brown-Séquard's fluid. 2. No fever or other symptoms caused by septic elements. 3. Equality of concentration of the fluid administered.

According to Professor Tarchanow's investigations, a direct effect of spermine injections upon the blood's circulation has been observed. The action of the heart is greatly retarded, and the height of the pulse and its strength, as shown by the sphygmograph, five times, and even more, increased. These phenomena are explained by a stimulation of the nervous centres, especially the heart ganglia and the vasomotor nerves. Doctors Sicharew and Hubbenet, in the St. Petersburg Kalinkin Hospital, reported the following interesting case:

A woman, twenty-nine years of age, who had suffered for thirteen years from syphilis, was treated with blue ointment for the last six years. She became very anæmic; had at the time three ulcers on her forehead, two of which affected the bone; on the right radius periostitis gummosa, which made the movement of the hand very painful; inflammation of the right knee-joint, which was greatly swollen; periostitis on the right tibia; œdema on lower limb and foot; movability of the right knee-joint but fifteen degrees; gait very uncertain, digestion poor, frequent diarrhœa, pulse weak. In this

[1] Rosenheim: Deutsch. Med. Wochenschrift, 1891, No. 49.
[2] Boas: Diagnostik u. Therapie der Magenkrankheiten. Leipzig, 1891, Seite, 134, and Deutsche Med. Wochenschrift, 1891 S. 1080.
[3] Read before the Chicago Medical Society, March 5th.

condition the patient was put under the treatment of spermine injections. The pulse strength in the right hand and general feeling improved after the second injection. Pain of the right wrist decreased, œdema of the leg disappeared, and even the movability of the knee was restored almost to the normal condition after five injections. The pulse, being 106 before, fell to 86. The digestion became normal, and the muscular strength increased about fifty per cent. within ten days.

Another startling effect was obtained by Dr. Prochorow on a man who suffered from chronic ulcers of the lower leg, and who for several months had been treated in a hospital without success. After the second injection the ulcers commenced to heal, and within three weeks the patient was cured. From such and a great many other results, published by competent authors, one is justified in concluding that spermine has doubtless some dynamo-genetic power, and it remains to be explained what function it has as a normal factor of the organism.

We know that by the chemical change of material some products originate which are poisonous to the system, and are, therefore, by the aid of some glandular organ, discharged from the circulation. Without doubt such poisonous products must have antagonists which render them comparatively harmless during their presence in the body, and in this way prevent auto-intoxication. Therefore such agents are of substantial importance to the system. In an average healthy organism a physiological balance is observed between these two chemical opponents. If the noxious products increase, or the stimulating agents decrease, it means a lack of resistance and strength—a disposition to disease. If, on the other hand, the stimulating agents are predominating, it means vigor and health. If such is the case, why should it not be possible, by the introduction of such stimulating agents into the system with which the organism defends itself, to overcome the lack of resistance brought on by any cause which is detrimental to health?

The difficulty, of course, will be to prove that the substance artificially obtained is identical, or at least similar, to those prepared in the organism. It is not very long ago that Charcot and Leyden made the discovery that in certain diseases on the surface of the lungs, spleen, and other organs, small crystals appeared, the significance of which was not understood until later examinations revealed their chemical composition. The crystals found, especially in asthmatic persons, and known as Charcot-Leyden crystals, are nothing else but phosphate of spermine. These crystals have also been found in the discharges of persons with typhoid, consumption, cholera; in leucæmia and other diseases. By their discharge from the circulation the organism of such patients evidently lost a quantity of spermine, and therefore such stimulation to the nervous centres as would be necessary to check the power of weakening elements. The evidence of the chemical relation between these crystals and spermine led to the treatment of asthmatic persons with injections of spermine, and, as anticipated, generally with good, sometimes with excellent, success. Lately I treated a case which greatly improved after ten injections. There can, therefore, be no doubt that spermine has a stimulating effect upon those centres to which the cause for asthmatic attacks is attributed.

Not less remarkable results were obtained in cases of neurasthenia and anæmia. Professor Sicharew[1] reported several cases of severe neurasthenia with agrophobia and claustrophobia—those strange phenomena in persons who become dizzy and nervous while being on a wide field, and who feel frightened when inclosed in a room—in which cases these symptoms disappeared after injections of spermine. In another case of severe anæmia the person referred to had nine or ten hysteric spells daily, suffered from insomnia and great weakness; perfect cure was obtained. An old gentleman, sixty-three years of age, with general debility, apathetic to his surroundings, unable to follow a conversation or to move about, improved so much that he could walk alone and grew stronger physically and mentally.

A special effect seemed to be obtained by spermine upon the spinal plexus; quite a number of cases of locomotor ataxia have been reported in which either a perfect and lasting cure, or at least a great improvement, was the result of spermine injections.

A patient of Dr. Sicharew,[1] fifty-three years old, with myelitis of the lumbar part of the spinal cord, causing paresis of the lower extremities, incontinence of urine, constipation, and loss of his sexual energy, recovered after nine injections.

To quote from the statistics of 182 cases recently published in the *Berlin Klin. Woch.*, an exceedingly good effect was secured in 52 cases of neurasthenia. Only 2 did not show an improvement. From 14 cases of locomotor ataxia, 12; from 23 with other nervous troubles, 21 improved. Also 57 with general debility, 9 with scorbutus, 14 with consumption, have shown a favorable effect.

Very much interested by all these reports, I have made this subject a special study for over a year, and have investigated the therapeutic value of spermine on my patients. To have sufficient material without depending on the Russian drug, which is very expensive—about two dollars a dose—I have experimented for fourteen months in my laboratory, fitted up for the purpose of securing an equally effective substance, and finally succeeded in getting the specimen I wished to obtain. I also, by the courtesy of Professor Poehl, in St. Petersburg, with whom I communicated, got into possession of a quantity of his preparation, which I used to compare the effects obtained from his spermine and the one prepared by myself. The result was equally favorable in cases selected for this treatment. I have since been supported in the investigation of the therapeutic value of my product by other gentlemen, who are present to night, and wish to demonstrate the result of some cases which have been treated during the last three months.

Case I.—Mrs. H——, thirty-nine years of age, five feet three inches high, very stout, weighs one hundred and ninety pounds. Has always menstruated regularly, but generally with great pain. Was married sixteen years ago, has two children. Since the last two years she has suffered from abdominal and lumbar neuralgia, for which she was repeatedly treated, without success. The abdominal organs are in a normal condition. Patient had also frequent palpitations and neuralgic pain of the heart, was very irritable, nervous, and easily frightened; could not sleep well, and complained of frequent headaches. In this condition she came to me three weeks ago. Taking the symptoms described as caused by general neurasthenia, I advised her to be treated by spermine injections. After one injection of a ten grain spermine solution she felt easier and quieted. She received one dose daily for nine days, during which she evidently improved. On the fifth day she stated that all her ailments had left her, and her husband claimed that she had changed remarkably. It is now twenty days since the first injection was given, and for the last two weeks the patient has felt perfectly well.

Case II.—Another treatment I began on this gentleman, who is seventy years of age, and, as you see, in apparently very good condition. He was never sick up to his sixty-fifth year; in 1889 he had an attack of inflammatory rheumatism of the joints; in 1890 was treated for gravel in the bladder, which disappeared after the use of lithia water, and since the last four years complains of neuralgic pain in the head and lumbar regions, heaviness in the legs, general weakness, and insomnia. I attributed these symptoms, naturally, to his advanced age, and thought spermine would refresh him. The injections, given as usual in the back, affected him in a peculiar way. He claimed to feel them all through his chest as a warm, stimulating agent, and soon assured me

[1] Berl. Klin. Woch., No. 40, 1891.

[1] Petersburg Med. Ges., February 26, 1891.

of their good effect upon his general health. The neuralgic pain in the back, and weakness in the limbs disappeared, his sleep and strength improved, the headache became less, and taking all together, he says he feels twenty five years younger.

Case III.—Of special interest, I think, is another case which I would like to present, and about which I would be glad to hear the opinion of some gentlemen who make diseases of the nervous system a specialty. From the most apparent symptoms I may call it a case of spinal sclerosis, but it seems to me that there are also other atrophic processes, possibly of a cerebral nature. As far as I could learn, the history is as follows: The patient, a man, fifty seven years of age, five feet ten inches tall, weighed two hundred and thirty pounds, was always in good health up till March, 1893. He did not indulge in alcoholic drinks, never suffered from syphilis, but was a heavy smoker. In March, 1893, he complained of slowly growing weakness in the right, later in the left, leg. His limbs were as if burdened by weights. Then a constant dizziness in the head set in. He was treated for apoplexy, with no effect. The weakness of his legs progressed until they would not carry him any more. His dizziness also grew worse; he became irritable, nervous; could not sleep, but had fair appetite and digestion. He was under the treatment of several physicians, the last of whom supposing the disease was of syphilitic origin, put him under inunctions and iodide of potash. The patient lost about thirty pounds. His condition, however, did not improve, and when I saw him first, on February 6th, I found the following state:

A man, strongly built, sat in an arm-chair, his features showing signs of despair, his eyes were clear but unsteady; he was unable to rise, or even to raise his legs, but could move his arms pretty freely. His grasp was weak, and the movement of the hand and arm somewhat inco-ordinated; for instance, when he wanted to reach for something he failed to strike it. The fingers spread apart, trembled; on the finger-tips and under the sole he had a numb and prickling sensation. He was free of pain, but complained of a heavy and dizzy feeling in his head. Reflex of the pupils was good. When lifted from the chair he could stand, his legs spread apart about eighteen inches. With closed legs he tumbled. He also became very uncertain with his eyes closed. Supported on either side he tried to walk; the legs were moved with difficulty and inco-ordinately; the feet were swung forward and set down with force, as though the patient was uncertain in reaching the floor; brought back to his chair he felt very tired. The sensibility of the skin and reflex of the patella were but little disturbed. The functions of the bladder and rectum have lately become weak, the patient has frequent pressure to pass urine, the examination of which showed nothing abnormal. Examination of the eyes showed atrophy of the left optic nerve, otherwise no characteristic signs. For the last two months he has been unable to lie down, was obliged to sit up all night, and compelled to sleep in his chair. He also complained of an almost constant ringing noise in his ears.

In this condition I subjected him to a treatment of spermine injections, with the following effect: After five injections he could easily rise and stand with his heels and toes closed, without tumbling. He got fifteen injections altogether and is now able to walk fairly well, and even to climb stairs with some effort. He feels a great deal stronger, can lie down and sleep sometimes all night. During this treatment I avoided any other therapeutic aid. The only symptom that still annoys him is the dizziness in the head, to which he pays so much more attention after being relieved from the confinement to his chair.

On these, and quite a number of other cases, I have studied the effect of spermine injections, and have had in some of them surprisingly good results, while the rest were more or less favorably affected. One feature I would like to emphasize; spermine seems to be a direct antidote against the bad effects of anæsthetics, probably due to the stimulation of the heart action. In 1891 the Russian surgeon, Weljaminoff, and recently I, myself, have observed that patients who received one spermine injection shortly before an operation was to be performed, had a splendid narcosis, and no nausea or any other bad effect after they awoke. In order to ascertain if their condition was really obtained by the action of spermine, I have experimented in the Chicago Hospital on a patient who had to take ether several times. He was a man of thirty-nine years of age, upon whom I was going to perform Lange's or Whitehead's operation for hæmorrhoids. He received a fifteen-grain spermine solution shortly before the anæsthetic was given. He was one hour and a half under the influence of ether; had a splendid narcosis, and when he awoke felt perfectly well. Eight days later I gave him again some ether to remove the stitches without using spermine. He then was only fifteen minutes under the influence of the narcotic, but it took him all day to overcome the nausea and bad feeling with which he awoke. It is, of course, a question in how many cases such a favorable effect will be obtained, and I do not doubt that frequently the injections may fail to act as desired, but still I think it may be worth trying.

Before I conclude I wish to say a few words about the chemical and physiological properties of spermine. Spermine, according to the analysis of Phil. Schreiner,[1] is a substance with the chemical formula $C_5H_{14}N$. Like other bases it forms salts when in contact with acids or metals. Some of these salts are long prismatic crystals which, though prepared by chemicals, retain the physiological properties that spermine possesses. Such crystals I have photographed from microscopical specimens; the specimens were obtained from preparations from different organs: No. 1, from testicles of a young bull; No. 2, from ovaries of a young cow. Nos. 3 and 4, prepared in a different way, are not as pure as the first ones; No. 3 is made from a small quantity of genuine Brown-Séquard's fluid; No. 4, from an extract of pancreas. Regarding the chemical composition, spermine belongs to the group of the imins, and has at first by some chemists been taken for æthylenimin, which has the formula C_2H_5NH; that is, the same elements, but in another group. By the investigations of Professor Poehl this opinion has been proved to be a mistake. He found that spermine is a base *per se*, with certain characteristic properties different from those substances with equal elements. Some of its reactions are: 1. With chloride of gold it forms a yellow precipitate, which later changes into flat crystals. 2. With chloride of platina it forms a crystalline precipitate. 3. With sodium of tungstate it gives a cloudy precipitate soluble in alkalies, insoluble in acids. The most characteristic property is a smell like human sperma, if spermine is brought in contact with chloride of gold and metallic magnesia. I have here a sample of such combination, and you may convince yourselves that my preparation really contains spermine. It was for these reactions that I worked over a year and made many thousands of experiments; after which I learned to understand why such a noted firm as Merck & Co. pronounced, in the *Pharmaceutical Zeitschrift* for Russia in 1890, that they did not succeed in preparing this valuable substance. The same statement has been made by other chemical firms; and I think this is the reason why, up to date, spermine has not appeared in the list of our modern therapeutics. Professor Poehl himself said, in the *Berlin Klin. Woch.*, 1891, "The conditions by which spermine crystals may be obtained from solutions which contain spermine are sometimes very difficult to determine;" and I also have found that, when I repeated the same process on the same preparation, I would at times not obtain the same crystallization as previously found.

Regarding the physiological action of spermine, chemical and physiological experiments have revealed the fact that the stimulation and otherwise beneficial effects from spermine injections are very natural. Since it is known

[1] Ann. Chem. Pharm., 1878, 194.

that spermine is not only an important factor of the reproductive glands in the male as in the female organism, but also exists in the thyroid gland, the thymus, pancreas, spleen, and other organs, it has become evident that spermine is a normal substance circulating in the blood, which has to and does accomplish a certain task in the economy of life. Medical science was greatly mistaken when it was believed that some organs, as the spleen, subrenal glands, and others, were of no use in a biological respect, and could just as well be parted with.. By the bad effect obtained from the extirpation of the thyroid gland we have been convinced that in this, as in other glands, a substance is produced which is absolutely necessary for our system, and which is probably similar to spermine; and so I believe that an important function of those organs is the production of spermine. The fact that male animals deprived of their sexual glands in their early days cannot compete in strength with their brothers, who are still in possession of these vital organs, has led to the interesting experiment on dogs to inject spermine as a substitute. Of four young dogs, all brothers, two treated this way, after being castrated, grew twice as large and strong as the other two. The incorporation of such substances as are produced in our glands into the blood is therefore a very natural support of a physiological process.

The manner in which spermine acts upon the organism has been carefully studied by Tarchanoff, Poehl, and others, who are of the opinion that the stimulative effect of spermine is due to its great oxidizing power. This theory is supported by the following facts:

1. Metallic magnesia in solution of the chloride of a metal changes into oxide of magnesia by the influence of spermine in very small quantity.

2. The blood, if influenced by chemical agents which diminish its oxidizing power, as chloroform, oxydul of nitrogen, strychnia, urea, can be brought to its normal condition by the support of spermine. This explains the favorable effects of spermine injections during and after the narcosis.

3. A direct test for the oxidizing power of spermine was obtained by quantitative examinations of the urine before and after spermine injections, which showed a stronger oxidation of the albuminoids after the injections.

From these facts it does not seem strange that in diseases which diminish the oxidizing energy of the blood and nervous system, as in neurasthenic, anæmic, cachectic persons, spermine injections have a very favorable effect. The same observation has been made in auto-intoxications, that is, in diseases where the products of the regressive albumin metamorphosis accumulate in the organs.

A very important factor for the effect of spermine is the alkalinity of the blood. As a rule, in all the named diseases, as well as in acute fevers, as typhoid, scarlet, pneumonia, erysipelas, the blood possesses a higher degree of acidity, in which spermine becomes insoluble, and therefore inactive. If the acidity is neutralized, as, for instance, in diabetes, by the use of Carlsbad salts, the spermine gets its activity again, and the improved oxidation causes the disappearance of sugar in the urine. The same result has been obtained without alkalizing the blood by artificial introduction of spermine. As the latter is a normal substance of the organism its application is an imitation and support of nature, and therefore entirely harmless if used under certain precautions.

It is different from Brown-Séquard's fluid, inasmuch as the latter contains a number of substances, as kreatin, kreatinin, hypoxanthin, lecithin, guanin, nuclein, and so on, which do not benefit and may hurt. Furthermore, as it is known that the organs from which the emulsion known as Brown-Séquard's fluid is obtained often contain the germs of disease and other products, the toxines cannot be eliminated by the way the fluid is prepared, and is, in a strict sense of asepsis, not a safe method. The injections are sometimes followed by an abscess, an accident that has recently occurred in this city in the hands of a physician of very high standing, a complication I have never seen reported nor observed after spermine injections.

The isolation of the active principle is therefore of vital importance, and besides has the advantage that the dose can be regulated, which is impossible in Brown-Séquard's fluid, because no one can tell how much spermine it contains. The solution I use is equal to two per cent., and always bacteriologically tested before being put in flasks, so I am sure it will be aseptic; and although I do not claim that it will have the desired effect in every case, on the contrary am fully prepared to see occasionally a failure, I think the subject is worth trying.

As far as the technique is concerned, I have found it advisable to use a series of from ten to fifteen injections, one a day, commencing with small doses, about five to ten minims, and gradually increasing the dose to twenty minims. The number of doses required is, however, a matter of personal judgment, and sometimes two or three injections are sufficient to secure a remarkable effect.

In order to keep this solution perfectly aseptic I have put up single doses in separate flasks, as the one demonstrated. They are opened by hitting against the neck, which will break at the mark. The fluid is then taken out with a hypodermic needle, which should always be thoroughly cleansed before and after using. The most aseptic instrument for the purpose is a syringe with a piston of asbestos. It seems practical to inject very slowly after the skin has been thoroughly sterilized. With these precautions, I have never had any trouble, except slight local irritation.

In conclusion, I wish to *résumé* the different effects obtained by spermine injections in various diseases treated by other physicians and myself:

1. The action of the heart is stimulated. (Drs. Hubbenet, Sicharew, Rotschinin, Nicholsky, Philipps, Tarchanow, Krieger.)

2 The respiration becomes easier, more regular, and less frequent. (Drs. Nastjukoff, Rotschinin, Injaseffsky.)

3. The general feeling improves. (Drs. Stange, Kissel, Rotschinin, Hubbenet, Ritter, Krieger.)

4. The muscular strength increases. (Drs. Tarchanow, Sicharew, Rotschinin.)

5. Sleep and appetite improve. (Drs. Nicholsky, Wikterow, Philipps, Krieger.)

6. Œdema, due to lack of power in the arterial system, disappears. (Drs. Hubbenet, Sicharew, Rotschinin.)

7. Sugar in the urine decreases. (Drs. Tarchanow, Poehl.)

8. Ataxy of muscles, especially caused by spinal troubles, decreases. (Drs. Sawitsch, Wiktorow, Hubbenet, Krieger.)

9. Neuralgia, especially of lumbar origin, disappears. (Drs. Rotschinin, Ritter, Krieger.)

10. The sexual functions are stimulated. (Drs. Sicharew, Hubbenet, Tarchanow, Krieger.) This may be taken as a result of general improvement, but in my estimation should not be considered a specific effect.

11. The functions of the bladder and kidneys, also of the intestinal tract, improve.

12. Local reactions are either of a slight and harmless nature or do not happen at all.

Although such favorable results have been recorded in hundreds of cases, I do not wish to say that they will always be obtained, and we have to be prepared in some cases to miss the desired effect. The exceptions, however, do not speak against the method as a whole, but rather, as the Latin phrase says: "*Exceptio firmat regulum.*"

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Professor Gussenbauer, of Prague, has been elected President of the German Surgical Congress for 1895.

Progress of Medical Science.

The Treatment of Pelvic Abscess.—According to the Berlin correspondent of the *Medical Press*, Dr. L. Landau recently gave an address on this subject. He said that with the perfection of gynecological technique gynecological diagnosis, as regarded the individual operations, had not advanced with great pace. For, first of all, diseases had to be discovered for given operations; and in the second place a large series of diseases of unequal importance had been grouped together under collective names, and had been frequently submitted without discrimination to a single operative treatment. This was especially the case as regarded pelvic suppurations, where the usual diagnoses—pelvic abscess, pelvic suppuration, adnexitis—were used without distinction for simple non-suppurative inflammation in the tubes or ovaries, or peritoneum, as well as for multiple extra- and intra-peritoneal abscesses. He had above all endeavored to fix an exact pathologico anatomical basis and a rational division of pelvic suppurations. He distinguished in the large group of extra- or intra-peritoneal abscesses, the abscesses in pre-formed spaces (pyometra, pyosalpinx) and those not in pre formed spaces (abscesses in paravaginal, paramitral tissues, in subperitoneal pelvic tissues, and in the connective tissue of the abdominal walls), with intermedial position of ovarian abscess. The abscesses might be single or multiple, or in the most varied combinations. The cause was always an infection. Among these was the gonorrhœal, the puerperal, and, "last not least," the infection of medical assistance (from the sound, curette, intra-uterine injections, caustics, operations on the cervix, and vagina). These abscesses terminated very differently. Inspissation, absorption, and spontaneous cure might take place, or perforation into the neighboring organs, and spontaneous cure or perforation into the peritoneum with circumscribed or general fatal peritonitis and pyæmia. Occasionally death took place from amyloid disease. The old motto, *Ubi pus ubi evacua*, was to be firmly held to, and this was to be carried out wherever the pus was accessible by simple, sparing, conservative methods. Incision came first under consideration. This was before all indicated with solitary uncomplicated pus cavities, whether lying within or without the peritoneum, or whether done from the vagina or abdominal wall. It should not be done through the rectum, as he had observed that healing was difficult. He made abdominal incision either above or below Poupart's ligament, at one sitting where dulness was complete, at two sittings if intestine apparently intervened. The first incision as for ligature of the iliac artery, pushing up the peritoneum, packing with iodoform gauze, etc. A means of distinguishing abscesses from induration, exudation, and fibroids, indispensable in many cases, was exploratory puncture. It at the same time formed an important preliminary to the incision. When operating from the vagina it was always done at one sitting. Solitary abscesses in the pelvis of whatever kinds were to be treated in this way, even pyosalpinx when the pus was in one cavity.

Considering the good results obtained by simple incision, the attempt was justifiable to try it in multiple abscesses (double one cavities, pyosalpinx, etc.). The causes of recurrence might be in fineness of the walls of the abscess, in adhesive fixations preventing the walls of the abscess falling in or otherwise. For cases in which simple incision would evidently be insufficient, as in multilocular pyosalpinx with or without perforation into the pelvis or abdomen, bladder or multiple perimetric and perisalpingial abscesses, a variety of other procedures had been practised, of which he would only mention historically the little-promising sacral and para-sacral incision. Here laparotomy was the operation usually practised, with removal of the abscess walls and its contents. He had treated one hundred and forty-one cases of inflammatory and suppurative tubal disease by laparotomy, with a mortality of 2.8 per cent. This undeniable good result coincided with those of other operators (Chrobak, Schanta, Zweifel, and others). But, unfortunately, as observation had shown, the permanent results were not equally favorable. Complete cures took place in only from sixty to eighty per cent. (Chrobak, Schanta, Landau). The reasons for this were threefold: 1. In the disadvantages of laparotomy itself (abdominal hernia, adhesion of intestine and omentum to wound and to one another, etc.). 2. In recurrences of inflammation and suppuration through impossibility of removing all excitors of inflammation. 3. In the purulent nature of the disease.

Then arose the question, how could these disadvantages be guarded against? The first step thereto attended by success was made in France; in the first place by Péan, and after him by Ségond, Doyen, Richelot. The uterus was removed, and excellent results had been reported from this method of treatment. But want of exact pathological data made it difficult to determine the value of such a mutilating operation. Spurred on by the statements of Péan and Ségond, and instructed by a number of vaginal extirpations of uterus performed since 1881, he had treated, since May, 1893, twenty-six cases by the French vaginal procedure. He had, however, deviated from this method in two essential points, and had extended the limits of the operation as laid down by these authors. He had never contented himself with removing the uterus and leaving behind the adnexa, but had always removed the diseased parts. He had adhered to this principle so firmly that when it was impossible to root out all the disease per vaginam, he had also opened the abdomen from above. He had, moreover, operated in this way on women when there was not only a simple double inflammatory disease, but in cases of complicated pelvic abscess. His definition of complicated pelvic abscess was one when, independent of double pyosalpinx or ovarian abscesses, there were present perisalpingial, periphoritic, or multiple isolated intra- or extra peritoneal abscesses; thus perisalpingitis purulenta, perimetritis purulenta, pyocele uterina, retro-peritoneal suppurations. Such were cases that could neither be treated by simple incision from the vagina nor through the abdominal walls by laparotomy, as it would either be impossible or would be too dangerous to carry out the operation. In all these cases there were multiple collections of thick, yellow, or green stinking, decomposing, or creamy pus. In some cases there was fistulous communication into the bladder or rectum, most of the cases were disabled from long-standing disease, and six had been repeatedly treated in other hospitals. In a large number operation had been already performed with temporary success (puncture, incision, resection, laparotomy). In some cases the attachments to the rectum, and especially the sigmoid flexure and to the bladder, were so firm that in carrying out the principle of removing all diseased parts the walls of these organs were torn. In two cases of vesical fistula originating in this way he had operated there and then, once from the vagina and once from the abdomen. In two ruptures of the sigmoid flexure he had performed circular resection. The whole of the twenty-eight cases were cured by the operation.

The Treatment of Typhoid Fever in Children.—At the onset of the attack, when the diagnosis is still uncertain and resembles in some respects the fever due to gastric disorder, it is well to administer small doses of calomel with a little milk-sugar, and to give a rectal injection of an infusion of chamomile in boiled water, with four per cent. of boric acid, morning and night (*Therapeutic Gazette*). Internally, to give from a coffee- to a dessert-spoonful every two hours of the following prescription:

℞. Benzonaphthol..... gr. xiij–xxx.
Syrup of peppermint..... ℥ j.
Syrup..... ℥ iv.

In the way of nourishment the patient may be given

every two hours a very small cup of milk, to which may be added as a stimulant a little coffee, tea, cognac, or a very slight flavoring with vanilla or chocolate. In cases where the diagnosis is thoroughly assured after the calomel has acted, it is well to prescribe citrate of magnesium to move the bowels and large rectal injections morning and night of a borated solution already named; or,

℞. Naphthol ..... gr. iij.
Boiled water ..... Oij.
To be used in four equal quantities.

Internally, an antiseptic dose, composed as follows, is useful:

℞. Benzonaphthol ..... gr. xv.–xxx.
Salicylate of magnesium. ..... ʒ ss.–ʒ j.
Syrup of peppermint ..... ʒ vj.
Simple syrup ..... ʒ iv.

If there is a bitter taste, it is well to replace the salicylate of magnesium by the salicylate of bismuth. Of this mixture give a teaspoonful every two hours, and morning and night administer a capsule or cachet containing two to four grains of the hydrochlorate of quinine, or else give the same dose by injection or suppositories. If the headache is severe, replace the quinine by antipyrin; spongings with tepid water may be resorted to, and care should be taken, by the use of a boric-acid mouth-wash, to keep the mouth clean. If the fever is of great intensity, the same treatment, with the addition of constant spongings with cooler water, is to be followed, and should the nervous disturbance be very great, small doses of coffee or of chloral may be used, but antypyrin is not to be employed. In grave cases the baths are given even more frequently, as often as is necessary to keep the temperature down. For the nervous agitation the following mixture may be prescribed:

℞. Hydrate of chloral ..... gr. vj.–xv.
Tincture of musk ..... gtt. xx.–xl.
Syrup of orange ..... ʒ j.
Water ..... ʒ ij.

Cold compresses are to be applied to the head, if there is delirium. In cases showing marked adynamia the cold should be applied to the head and the following mixture given:

℞. Hoffmann's anodyne ..... gtt. x.–xv.
Malaga wine ..... ʒ j.
Syrup of mint ..... ʒ j.
Water ..... ʒ iij.
A teaspoonful to a tablespoonful every hour.

In cases of typhoid fever in which there seems to be great cardiac depression, the pulse being feeble and showing evidences of collapse, it is well to use the following injection hypodermically morning and night:

℞. Caffeine ..... gr. xxx.
Benzoate of sodium ..... gr. xlv.
Distilled water, enough to make ..... ʒ j.
Ten to twenty minims of this may be used.

Where complications such as bronchitis, broncho-pneumonia, etc., arise, the same treatment is to be continued as that just given, but the cold spongings are to be stopped and a cotton jacket is to be applied to the chest. Morning and night a mustard sinapism should be applied to the chest and the stimulating treatment already indicated employed.

During the period of convalescence the baths are diminished as the temperature approaches the normal. Soups, broths, and thoroughly softly cooked meats and pulpy vegetables are allowed, and the following tonic mixture given in the dose of a dessert-spoonful three times a day:

℞. Tincture of gentian,
Tincture of cinchona, of each ..... ʒ v.
Fluid extract of kola ..... ♏ lxxv.

Champagne also is sometimes useful if it agrees with the patient. Should hemorrhage from the intestine complicate the case, absolute rest, with local application of cold, is to be resorted to. Small doses of opium may be administered by the mouth, and every two or three hours two or three drops of perchloride of iron are to be employed. Ice-compresses should be applied over the belly. Where there is danger of sloughs and abscesses it is well to wash the part with a four-per-cent. solution of boric acid, and afterward apply iodoform or salol. Abscesses, of course, should be opened, drained, and irrigated with mild antiseptic solutions. For the prophylaxis of typhoid fever the discharges of the patient should be received in a five-per-cent. solution of sulphate of copper or in a 1 to 1,000 solution of bichloride of mercury. The milk which is taken by the patient should be carefully sterilized, and after the case recovers careful disinfection of all the vessels used by the patient should be carried out.

The Value of Boiled Milk as an Article of Diet.—Every practitioner of medicine knows that in the treatment of certain cases of diarrhœa, where an absolute milk diet is required, better results follow the use of boiled milk than of raw milk, and for this reason it has become a popular idea among the laity and members of the profession that cooked milk is the more digestible. However this may be in clinical experience, it is certain that experimental research does not justify this conclusion. Ten years ago the late Dr. Randolph, of Philadelphia, made an interesting series of experiments to determine this point. A number of men in perfect health were given raw milk to drink; an equal number, equally healthy, were given a similar quantity of boiled milk. An equal time after the ingestion of the liquid a hypodermic injection of apomorphine was administered to each, and a careful examination made of the vomited matters to determine how far the process of digestion had proceeded. In every instance it was found that the raw milk was more digested than the cooked, and as Randolph graphically expressed it, "We obtained proof that in making milk, nature made that compound most easy of digestion."

The experiments of Crolas, on the other hand, seem to point to a different result, for he believes as a result of his studies that boiling has no action whatever on the casein or lactose, and removes from the liquid a small quantity of butter, which is entangled with the film of albumin which forms on the surface of the milk. He also thinks that boiling increases the quantity of the free soluble phosphates, and concludes, in opposition to the studies of Randolph, that boiled milk is equivalent, if not superior, to raw milk.

The correct solution of the problem probably lies in the class of cases to which the milk is administered. There is no doubt whatever that raw milk is more digestible than boiled to the healthy individual, and it is an undeniable fact that boiled milk is far more constipating, and that an attempt to place a patient upon a diet of boiled milk would more certainly tend to disorder digestion and assimilation than a similar attempt with the raw article. In Bright's disease, diabetes, and similar conditions in which a milk diet is desirable, we may therefore conclude that raw milk is the liquid to be employed, whereas, in cases of diarrhœa, the boiled milk is by far the best preparation. We have already pointed out in earlier leading articles that both raw and boiled milk have their digestibility very much increased by being somewhat diluted with any sparkling water, or by the addition of a sufficient quantity of salt to give a distinct flavor.—*Therapeutic Gazette.*

Treatment of Vaginismus.—In a paper read before the British Medical Association, Dr. T. More Madden held that vaginismus is ordinarily of constitutional or neurasthenic origin, and is frequently associated with a morbid condition of the pudic nerves. Hence he relies chiefly on constitutional treatment in combination with local nerve-stretching. To effect this he recommends forcible dilation, under ether, of the vagina, so as to thoroughly stretch, or even partially rupture, the fibres of the affected pudic nerve and its terminal branches. If this treatment be adopted, Dr. Madden believes that it will seldom be found necessary to resort to operative treatment for the cure of dyspareunia caused by vaginismus.

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BRIGHT'S DISEASE AND ITS INSANITIES.

BRIGHT'S disease in its various forms is so common and dreaded a malady that all the phenomena connected with it are justly objects of importance to every practitioner. One particular phase of the Brightique state is mental disturbance. Concerning this, much has been written of late, so much, indeed, that the matter has become rather beclouded than otherwise by the learned, scholastic, and not very accordant contributions of alienists. One writer has placed uræmic poisoning among the frequent causes of insanity and the starting-point of nearly all cases of melancholia. Dr. Savage, on the other hand, as the result of several hundred examinations of the urine of the insane, declares that he has rarely found albuminuria.

There can be no doubt of the importance of the arterio renal sclerosis associated with Bright's disease in causing many of the insanities of middle and late life. The psychical symptoms which develop in connection with kidney disease are usually grouped in three classes. There is first the acute delirium which sometimes is associated with acute nephritis due to some infection. The uræmic poisoning here, if it exists, is only one factor, and the delirium itself is classed as a "non-vesanic" insanity, *i.e.*, it is not insanity at all in the technical sense.

Uræmic or Brightic insanity proper occurs only under two forms. In the one the patient has no insane heredity or tendency, but is perhaps of neurotic temperament. The poisons of the uræmic state in such an individual affect the nutrition of the brain, there is some arterial spasm or thickening of the walls, and the total amount of blood sent to the brain is inadequate. The patient suffers from a mild and quiet mania which is allied to dementia. He improves or gets worse with the course of the albuminuria, and if that disappears he may get entirely well. In the other cases the patient is a person predisposed to insanity, and the renal trouble acts simply as an exciting cause. The form of mental trouble in these cases is not much affected by the albuminuria. It may be a monomania, a melancholia, or some more excitable state.

When the practitioner notes the appearance of mental symptoms in a case of chronic Bright's disease, it is of the first importance that he make himself familiar with the history and diathesis of his patient. If the insanity is of the first type and due mainly to the renal trouble, treatment directed to this will often relieve and even cure the patient. He can be treated at his home. In the second class of cases the outlook is more uncertain; serious outbursts may occur, and restraint in some institution is indicated.

THE COMPOSITE PHYSICIAN.

PROFESSOR H. P. BOWDITCH has published in *McClure's Magazine* two series of pictures of twelve Boston physicians with their composite photographs. The second series and its composite represents the same gentlemen five years later. Dr. Bowditch's article is a contribution to science rather than to the beautiful. We say this after a really unbiassed and sympathetic search for a handsome man among the twelve esteemed and eminent confrères. We do not find, to be sure, any striking type of the opposite kind; there are no features that are absolutely Socratic in their curves or their asymmetry. But it is evident that Boston's twelve have not won success through the meretricious aid of personal loveliness.

There is no Antinous there; no Apollo, or any of the quality that used so seductively to "hang upon the cheek of night" in the Cleopatra days. However, classic authority says it is a nuisance to be too beautiful—"miseria nimis pulchrum esse hominem." And we note that the individual Boston physician is interesting, and his composite a most agreeable-looking gentleman. The age of the composite is about forty. The hair is thin, and the parting is nearer the right ear than urban fashion dictates. He wears a heavy mustache with the ghostly suggestion of an imperial. The nose turns up a trifle and reveals well-defined nostrils, suggesting an absence of Semitic and a touch of Celtic blood. There is a deep naso-oval fold indicating a consciousness of life's burden and responsibilities. The forehead is high and broad as in all types of successful men except the artist. The eyes are those of a composite, bright and kindly. The collars and ties date back into the last decade.

Altogether the Boston composite is a good type of a man, not resembling in the least any of the individuals of which it is made.

TUBERCULOSIS AND BUTTER.

IT is hard to get away from the malign influence of the cow. Such at least is the case if we may trust the investigations of bacteriologists and sanitarians. The statistics of slaughtered animals in Prussia, Hanover, Switzerland, and other European countries show that from two to twelve per cent. of the cattle are tuberculous, and though their flesh is not often dangerous, yet the milk must in most cases have been so. We can guard against tuberculous milk by sterilization, but now danger is threatened us from the butter. Several years ago Heim showed that butter from tuberculous milk contained bacilli and could produce infection. Bang (*Deut. Zeitsch. f. Thiermed.*, vii., p. 5) reached similar conclusions.

Professor Roth, of Zurich, has, however, recently made experiments of more striking significance (*Correspond. bl. f. Schweit. Aertz.*). He went into the markets and purchased butter from twenty different sources representing different cantons of Switzerland. He then inoculated guinea pigs with this butter. In

eighteen series of experiments the results were negative, but in two the inoculations were followed by tuberculosis. In other words, ten per cent. of the butter of the Swiss markets contained tubercle bacilli.

Quite independently of Roth, Dr. Brusaferro, of Turin, made experiments with the butter of the Italian markets. In nine tubs he produced infection once, which gives about the same proportion as Roth's.

It is not to be supposed that ten per cent. of market butter is necessarily dangerous, for in many instances the number of bacilli is small and quite unable to cope with the juices of the stomach. Still, infected butter is not safe to the predisposed, and the fact of its existence in Europe at least should be borne in mind. What makes the matter additionally serious is the fact that there is not, so far as we know, any practical way of sterilizing butter.

AN ANTI-OPIATE SOCIETY.

An Anti-opiate Society has been organized in this city, and announces that its objects are to use such means as may be considered best to prevent the unnatural use and the abuse of opium and its preparations, and of cocaine, chloral, etc.

We are told that there are now in the United States one and a half million men and women who habitually use opium in some of its forms. Twenty years ago there were less than three hundred thousand opium users in the same territory. The extent to which this vice is increasing may be inferred from these figures: in the city of Chicago, 25,000 persons are addicted to the habit; in New York City, over 50,000; and in St. Louis about 20,000 are slaves of this merciless tyrant.

It is added that "There are other thousands of habitual users of morphine who would never have touched it had they not been ignorant of its powers, influence, and effects. It is such ignorant ones that the Anti-opiate Society is trying to reach with informa ion regarding the nature of the insidious drug, and with warnings to the young and unwary against a vice so delusive and so dangerous, trying to reach them before they have become hopelessly degraded by its influence."

The increase and the prosperity of the various "anti" societies is one of the evidences of the development of altruism as well as of intelligence in modern times. Some of these societies, unfortunately, show more altruism than intelligence. We trust that the present organization will not be of such kind. There is indeed little room for exaggeration in describing the evils of the opium habit; and there is, we fear, among some physicians, though they are vastly in the minority, a disposition to be careless in prescribing the narcotics. Perhaps the one thing which general practitioners least realize is the quickness with which a tenacious habit is formed. The constant use of opium for a few weeks, for example, will as a rule establish a habit hard to break.

On the other hand, we regret to see the new society starting out with exaggerated and unsupported statements of the prevalence of the opium habit. Fifty thousand opium users in New York City means that one out of every twenty adult persons is a habitué. This is too absurdly untrue to need contradiction. Our advice to the new society is to re write its circular, and afterward to be earnest but also honest.

News of the Week.

Death of Dr. Francis G. Mosher, of Coeymans, N. Y.—Dr. Francis G. Mosher died September 22d, at his residence, Coeymans, N. Y., of cancer, aged seventy-one. He was a great sufferer for many months previous to his death, but continued his work up to within a short time of his death, completing forty-six years of practice. He was fitly mourned by the entire village, and all business was suspended during the funeral ceremonies.

Dr. Charles A. Powers has resigned his position as Attending Surgeon to St. Luke's Hospital, and to the New York Cancer Hospital, and has removed to Denver, Col.

Medical Society of Virginia.—The Twenty-fifth Annual Session of this Society will be held in Richmond, Va., beginning October 23, 1894. An interesting programme is offered. The president of the society is Dr. William P. McGuire, of Winchester, and the secretary, Dr. Landon B. Edwards, of Richmond. The address to the public and profession will be delivered by Dr. R. S. Martin, of Stuart, Va.

Physicians on a Strike.—The daily papers state that the physicians of Mount Vernon, N. Y., are on a strike. They have announced that they will not examine lunatics, because the Board of Supervisors of Westchester has cut down the charge from $10 to $5 for each case. There are two insane prisoners in the Mount Vernon jail waiting the result of a doctor's verdict.

Chicago has 22 general and 16 special hospitals, with 3,409 beds.

The Chicage Health Board has adopted the New York plan of supplying culture-tubes and making microscopic examinations in cases of suspected diphtheria.

Women in Medicine.—Without egotism, we think that the women in medicine as a class are superior to men as a class; because it is the picked woman, the ambitious woman, whose desires are above the common level, who enters the profession. It takes grit and gumption to be a woman physician even to-day, for the woman in the profession must have a double motive for success: she must succeed for her own sake as well as for the reputation of capability all women desire. This may not seem fair, but it is nevertheless true. — *Woman's Medical Journal.*

Medical Journals in the United States.—There are two hundred and twenty-one medical journals published in the United States, but then there are one hundred thousand physicians.

Take a Vacation.—Dr. Alexander Stone says: "Doctor, whatever you do, do not forget to take your vacation. I can assure you that you will be able to do more work, better work, make more money, enjoy life fuller and live longer, if you work eleven months in the year, than you would if you labored for twelve." But perhaps some of the doctors' hearers feel as the tramp did when advised to take three regular meals a day.

A Medical Populist.—The *Medical Sentinel* says that the democrats and populists of North Dakota have nominated Dr. M. F. Merchant, of Ellendale, for State Commissioner of Labor. *The Sentinel* adds: "Of all the nominations made so far this fall in any of the States,

this is one of the most appropriate. What man of all men understands so well what 'labor' means?" Dr. Merchant is perhaps the first medical populist who has run for office.

Sugar as an Oxytocic.—A French obstetrician, Morso, asserts that sugar is an excellent and useful stimulator of uterine contractions during labor. He gives an ounce dissolved in eight ounces of water, and reports ten successful cases. Sugar is a direct stimulant to smoothe muscular fibres.

A New Method of Giving Thyroid Extract.—Dr. Edward Blake writes to the *Provincial Medical Journal* that in a case of myxœdema in which thyroid extract was not tolerated by the mouth, twice a day, after hot sponging and vigorous towelling, the body was well rubbed all over with the following mixture:

℞ Thyroidine..... 10 parts.
Ether..... 60 parts.
Lanoline .....480 parts.

A rise in the temperature of one degree followed the inunction, showing that the extract was really absorbed. This proceeding was well borne, and was followed by satisfactory results.

The Library of the French Academy of Medicine — Dr. Dureau, the librarian of the Academy of Medicine at Paris, gives some interesting details concerning his charge in a recent report. The library contains 147,405 volumes, including pamphlets, of which 8,164 were contributed during 1893. The greater part of these works was due to generous benefactors. Among other curiosities the library contains a collection of six thousand engravings and portraits of medical men, the greater number having been presented by a country doctor named Munaret, who for upward of forty years has been an ardent collector.

Further Reports Upon the Value of the Antitoxin Treatment of Diphtheria —M. Roux has communicated the following statistics with regard to the trial of the remedy at the Hôpital des Enfants Malades in Paris. Between February 1st and July 24th, 448 children were admitted into the diphtheria pavilion. Of this number 109 died; a mortality of 24.33 per cent. This was to be contrasted with the mortality in the four previous years, when 3,971 cases were admitted, and 51.71 per cent. died. The improvement in the death-rate attributable to the treatment was therefore 27.38 per cent. If compared with the mortality among the cases of diphtheria admitted during the same period into the Hôpital Trousseau the results appeared still more satisfactory. Of 500 children admitted into that hospital 316 died; a mortality of 63 20 per cent. A critical examination of the statistics for this year involved the drawing of a distinction between cases of true and false diphtheria. Of the 448 children admitted into the diphtheria pavilion, bacteriological examination showed that 128 were not infected with true diphtheria; further, 20 of the cases were already moribund when admitted. There remained, therefore, 300 cases which afforded a fair test of the efficacy of the treatment; they yielded 78 deaths, a mortality of twenty six per cent., which was to be contrasted with an earlier series of cases subject to the same eliminations but treated by other methods, which gave a mortality of fifty per cent. The rule had been to give an injection of the serum, which was obtained from the horse, immediately after the admission of the child. The injection was not repeated if bacteriological examination showed that the case was not one of true diphtheria. In none of these cases was the injection followed by any unfavorable symptoms; it was not painful, and if made with aseptic precautions was not followed by any local disturbance. In cases of true diphtheria a second injection was given twenty-four hours after the first, and as a rule this was sufficient. If the temperature remained elevated a third injection was given. As a rule a child received an amount of serum equivalent to one-thousandth of its weight, but in a few cases the quantity reached one-hundredth of the child's body weight. Under the antitoxin treatment complications were observed in only a few cases, but in some paralysis supervened. Occasionally during convalescence an urticarial eruption was observed, apparently due to the injections. The treatment appeared to diminish the liability to albuminuria. Dr. Aronson, of Berlin, states that he employs serum of the immunized horse, which is three times stronger than that of Professor Behring. In the five months ending with July he had treated with his serum 192 patients suffering from diphtheria, as ascertained by bacteriological examination. The mortality was fourteen per cent. In twenty-three cases the children were moribund when admitted; eliminating these there remained 169 cases with 19 deaths—a mortality of 11.2 per cent. This contrasted with a mortality in the same hospital varying in the three years before the adoption of the antitoxin treatment from 32.5 per cent. to 41.7 per cent. Eighty-two cases had been treated by the serum in other hospitals in Berlin, and the general mortality of the whole series of 274 cases was 15.3 per cent. He had also employed the antitoxin serum with the object of producing immunity in the children belonging to families in which one case of diphtheria had occurred. Among the 130 children thus inoculated 2 only contracted diphtheria, and that of a very mild type.

The Health of the Czar.—There seems to be no doubt that the Czar of Russia is seriously ill, though the reports as to the nature of his malady are very contradictory. He has been said to have diabetes, influenza, simple coryza, rheumatism, mental disease, Bright's disease, epilepsy, and apoplexy. It appears probable, however, that the trouble from which he is suffering is nephritis, following upon the attack of influenza and pneumonia with which he was visited last winter. Professor Leyden, of Berlin, was called to see the Czar in consultation with his regular physician, Dr. Zakharin, and has advised him to pass the coming autumn and winter in some mild climatic resort in southern Europe. He has gone temporarily to Livadia in Greece.

Medical Legislators in France.—The medical members of the French Parliament held a meeting on June 21st in the Palais Bourbon, and decided on forming an extra-parliamentary group which should occupy itself with the examination of the numerous questions concerning the medical profession, the organization of charitable institutions, and the public health. There are in the two Chambers no fewer than forty seats occupied by members of our profession; and there are also two medical men in the Cabinet, Drs. Lourties and Viger.

The Southern Surgical and Gynecological Association will hold its seventh annual session at Charleston, November 13th, 14th, and 15th. The meeting promises to be the most successful in the history of the organization. Papers will be presented by the leading surgeons and gynecologists of the South. The medical profession is cordially invited to attend. Dr. Cornelius Kollock, of Cheraw, S. C., is president, and Dr. W. E. B. Davis, of Birmingham, Ala., secretary.

A New Carriage for Medical Men.—Medical men, says *The Lancet*, will be interested in a new "interchangeable" or "convertible" carriage, which has recently been introduced. It has been shown at the Coaching Exhibition recently held at the Royal Aquarium. It is a radical change in the method of building convertible carriages. The inventor builds a foundation consisting of wheels, undercarriage, and driving seat, and upon this he places the movable bodies, forming an open or a close carriage of perfect shape in either case, and free from such defects as draught, rattle, and complication of parts. This carriage will enable its owner in crowded towns, where coach-house room is scarce and dear, to keep an open and a close vehicle—for there are practically two carriages in the space usually occupied by one. The change from brougham to victoria, or *vice versa*, is readily and easily made in the coach-house, and the carriage in either form cannot be distinguished from the ordinary private brougham or victoria.

Treatment of Diarrhœa, Whooping-cough, and Nocturnal Enuresis at the Evelina Hospital for Sick Children.—At this season of the year, writes the London correspondent of *The Therapeutic Gazette*, the most common ailment in the medical department is diarrhœa. Dr. Fenwick tells me that his experience leads him to rely chiefly upon antiseptics in such conditions. His favorite remedy is benzo-naphthol, which is given in grain doses thrice daily, even to very young children. It will be remembered that benzo-naphthol is a benzoate of β-naphthol, and that it is said to break up in the intestine into its constituents, both of which have an antiseptic action. Another remedy much used in this condition is carbolic acid, which is given in minim doses, either as a mixture or in the form of perle. Some of the physicians prefer creolin, giving it in drop doses on sugar, and in many cases this treatment is highly successful. Its nauseous odor and taste, however, prevent its finding favor with children. Lastly, creosote is used by some, but this is open to the same objections, and to a greater degree, as those already referred to in regard to creolin. Whooping-cough comes so often under treatment that it has been deemed desirable to devote a whole ward to the treatment of this affection. The most successful of all drugs at present in vogue is bromoform. It is given in doses of from 1 to 5 minims, either suspended in syrup or in a mixture, the taste being concealed by means of paregoric or some other flavoring ingredient. The drug does not appear to alter the duration of the affection, but is most useful in checking the paroxysms of cough and vomiting. I do not know whether it is a matter of common observation in other institutions, but I am given to understand that quite a large proportion of the serious cases of whooping-cough admitted at the Evelina develop miliary tuberculosis after admission. Another ailment frequently met with in all children's hospitals—nocturnal incontinence—is generally treated by the application of the faradic current, used as strong as the patient can bear it. One pole is applied to some neutral point, such as the nape of the neck, and the other is applied to the perineum, the latter electrode being more or less cone-shaped, and provided with a movable covering of either chamois leather or, better, of amadou. With this arrangement a fresh covering can be used for each patient. Improvement is generally very rapid, and the trouble often ceases after a few applications of the current. Should it relapse, a renewal of the treatment is attended with equal success. Treatment by such means is found to be far more successful than by any of the drugs, such as belladonna, which were formerly employed, but which, if used at all, are given solely as adjuncts to the electrical treatment.

Society Reports.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Seventh Annual Meeting, held in Toronto, Ontario, September 19, 20, and 21, 1894.

FIRST DAY, WEDNESDAY, SEPTEMBER 19TH.

THE Association met in the Council Chamber of the College of Physicians and Surgeons at 10.15 A.M., and was called to order by the Second Vice-President, DR. GEORGE F. HULBERT, of St. Louis, Mo.

An Address of Welcome on behalf of the local medical profession was delivered by Dr. James Thorburn, which was responded to by Dr. Hulbert.

The Incision in Abdominal Surgery—Methods and Results.—DR. J. HENRY CARSTENS, of Detroit, read a paper with this title, of which the following is a summary:

1. With a small, narrow-bladed, sharp knife, make a clean incision through the skin of the necessary length, and with another sweep or two cut through the linea alba, muscle, etc. Lift the peritoneum with your fingers, open it, and enlarge the incision. The use of the forceps to lift the tissues, or the grooved director is unnecessary.

2. In closing the abdominal incision use animal ligature, kangaroo tendon, and catgut. First carefully bring together the peritoneum in a running stitch, then the transversalis fascia, and the rectus if the incision is through this muscle. Then carefully bring together edge to edge the tendinous insertion of the oblique muscles. The fat and loose cellular tissue above can be brought together in one or two tiers, according to thickness. Bring the skin together carefully with Marcy's cobbler stitch, thus burying all your sutures.

3. Then seal with collodion, and if everything connected with the operation has been carefully aseptic, absolute primary union will take place, and the different layers of the abdominal wall will have been brought together as near as possible as they were in the first place, and no hernia will result.

4. In cases of extensive umbilical, ventral, or other hernias, it is best to bring the peritoneum together with an over-and-over stitch of kangaroo tendon or catgut; to make a flap splitting operation of the ring, which is brought together with silkworm gut or silver wire, which are buried, and then the fat and skin are united with the buried animal suture.

Plastic Surgery in Gynecology.—DR. JOSEPH PRICE, of Philadelphia, read a paper on this subject, in which he said that the practice of surgery in all its branches required a mechanical trend and an ability to devise means to accomplish a given end. In order to mend a perineum intelligently, the mechanism of labor must be understood

and the lines of fracture appreciated. In cases of serious pelvic invasion with accompanying lacerated cervix, it is often better, or imperative, first to do the pelvic operation, and to follow this at another time with the cervical repair. The author condemns the plan advised by some to perform internal and external operations at one sitting. Perineal tears always occur at certain parts of the perineal structure. These tears are either lateral, under the ramus of the pubes, or central, extending from the vagina toward the rectum. The tears toward the rectum tend to run around it rather than through it, owing to the differentiation of structure in these two tubes. The tears of the vagina are always from within outward, from above downward, and that therefore the external or skin operations for perineal lacerations are essentially unscientific procedures. All operations for the restoring of the integrity of these parts should be done in the lines of their destruction, and therefore from within outward and from above downward. When the skin of the perineum is involved, mending of this is merely a cosmetic procedure. The cosmetic element too often predominates in many of the so-called perineal devices. The silk-worm gut with shot is by far the most preferable material to be used for sutures. As little tissue as possible is to be included within the ligature, and strangulation is to be avoided.

The Care of Pregnant Women.—Dr. W. B. Dewees, of Salina, Kan., read a paper in which he held that the paramount duties of the obstetrician in the study and care of pregnant women may be classified as follows: 1. To discover if the patient be actually pregnant. 2. To determine positively if the impregnation be uterine or normal as contradistinguished from tubal, abdominal, or abnormal pregnancy. 3. To carefully note the pregnant woman's history, including her age, primiparity, or multiparity, environments, station in life, general condition of health, period of gestation, as well as her dress, food, drink, and habits of life. To make repeated examinations of the urine and ascertain the temperature from the time pregnancy is established to the termination of gestation. 4. To make a physical examination for the purpose of accurately determining the diameter of the pelvic straits; the symmetry and size of the bony outlet; the integrity, condition, and position of the vagina, uterus, and other intra-pelvic viscera, and adjacent structures; the state of the abdominal muscles; the presence or absence of hernia, varicose veins, tumors, etc., the shape, size, and condition of the breasts and nipples; the condition of the heart, lungs, mind, stomach, bowels, etc. 5. To observe the state of the fœtus, its strength and viability, as well as the implantation of the placenta. The thoughtful obstetrician will advise his patient as to the requisite régime. The consciousness of his full duty will impulse him to insist upon: 1. Absolute regular hours and wholesome environments. 2. Plain but nutritious and wholesome food and drink, being principally composed of fresh lean meats, fresh fruits, pure milk, and distilled water. 3. A proper amount of exercise, by walking or light labor on foot, and maintaining the correct erect posture. 4. An open condition of the bowels and skin, which is to be chiefly maintained by proper diet, exercise, and bathing, the wearing of flannels, warm low-heeled shoes, and loose garments, and in rare cases the proper use of laxatives and hot-water enemas.

Appendicitis, With Report of Cases.—Dr. George S. Peck, of Youngstown, O., read this paper.

Case I.—Operation during interval of attacks; obstruction; July 6th did second operation; recovery. Operation July 27, 1894. Appendix buried in mass of strong adhesions between ileum and cæcum containing large fecal concretion. Appendix removed in segments. Ileum returned to abdominal cavity. During first six days highest temperature 100° F.; pulse, 100. On the fifth day four attacks of vomiting, fourth containing fecal matter. August 4th reopened incision; found about three feet from ileo-cæcal valve complete obstruction by band of dense adhesions. Obstruction liberated, ileum brought out in the incision, and abdominal cavity packed with gauze. During entire day of August 1st pulse ranged from 140 to 160; vomiting fecal matter continued at frequent intervals; tympanites increasing. Seven o'clock symptoms of obstruction continued, becoming worse every hour. As a temporary expedient a small opening was made in ileum, fetal matter and flatus came away in large amount; vomiting ceased and tympanites disappeared. From the thirteenth day to the present time patient has had from one to three daily passages per rectum; sat up for the first time the thirty-third day. Discharged from hospital on the fifty-fifth day after first operation.

Case II.—Operation during the fourth day, first attack. Large appendix removed, containing two drachms of pus and fecal concretion. Adhesions broken up, incision packed with iodoform gauze. Uninterrupted recovery. Discharged from hospital twenty-eighth day after operation.

Case III.—Operation third day of third attack. Peritoneal cavity opened, adhesions broken up; large appendix removed; uninterrupted recovery.

Case IV.—Operation during tenth day. Death from septic peritonitis in sixty-five hours. Large abscess cavity evacuated; appendix gangrenous and detached; washed out by irrigation. Autopsy revealed general septic peritonitis.

Case V.—Perforating appendicitis. Operation during third day of attack. Death from septic petitonitis twenty-seven hours or more after operation.

Case VI.—Similar to previous one, died from general septic peritonitis.

Appendicitis; Observations Based on a Clinical Study of Eighty-four Cases.—Dr. W. G. McDonald, of Albany, presented a communication with this title. Out of the great amount of literature, controversial and otherwise, three important landmarks are established: 1. That for all practical purposes all inflammatory processes in the right iliac fossa arise from the appendix. 2. That practically the appendix is always intra-peritoneal, and that any operation undertaken for appendicitis that does not involve the entering of the peritoneum is false in its surgical conception. 3. That idiopathic peritonitis does not occur. That many cases diagnosticated as such, are really cases of perforating appendicitis. The author classified the varieties as 1, acute perforating, fulminating appendicitis with general peritonitis; 2, acute suppurating appendicitis with local plastic peritonitis and abscess; 3, subacute appendicitis, variously termed catarrhal, chronic, relapsing, or obliterating appendicitis, or appendicular colic. The perforation occurs very much earlier than is commonly believed. That acute suppurative appendicitis with local peritonitis presents the most favorable field for operation during the attack. The removal of the appendix is to be undertaken with great circumspection when it lies in the wall of an abscess cavity. The third group of cases do not require operations during the first attack, but if repeated attacks occur, operation during quiescence is demanded. Operative results in these cases are most favorable.

Second Day, Thursday, September 20th.

Ligation of the Uterine Arteries for the Cure of Fibroid Tumors and Checking Hemorrhage.—Dr. W. B. Dorsett, of St. Louis, read a paper with this title. The object of which, he said, was to establish his priority in resorting to ligation of the uterine arteries for the cure of fibroids. He made observations during December, 1889, and January and February, 1890, and reported a case of atrophy of the genitalia and described the technique of the operation of ligation of the uterine arteries for the cure of fibromatous growths in a paper read before the St. Louis Medical Society, May 17, 1890, and which was published in the *St. Louis Courier of Medicine*.

Remarks on the Surgical Treatment of Intussusception in the Infant Based on Two Successful Cases.—Dr. Henry Howitt, of Guelph, Ont., read the paper. In it he recommends early abdominal section as being the best method of treatment to reduce the high mortality rate of intussusception in early infancy. Of the two cates cited, one child was at the time of operation under three, and the other under six months of age. In regard to the steps of the operation, among other things he advises a small median incision; evisceration; reduction by pressure on apex of intussusceptum, while the intussusception is drawn in the opposite direction; and forcing the contents of ileum into colon before returning the intestines to abdomen.

Dr. Robert T. Morris, of New York, demonstrated a method of intussusception in rabbits.

Treatment of Distention of the Fallopian Tubes Without Laparotomy and Removal.—Dr. Frank A. Glasgow, of St. Louis, read a paper which was intended to bring before the profession a method of curing tubal distention by means of intra-uterine treatment, in contradistinction to laparotomy and removal. By this means the uterine ends of the tubes are made more patulous and a discharge takes place from the tube through the uterus. He called attention to the fact that the tubes, as far as his observation goes, are always pervious at the outer extremity of the cornu, hence when removing them we must always clamp them before cutting. The obstruction must be within the uterine wall, probably in the endometrium, and also to the fact that gonorrhœal inflammation is not an adhesive inflammation, and hence it does not follow that the tubes have a true atresia following this inflammation. His opinion is that the closure is due to a swelling of the endometrium, and hence a closure at the uterine end takes place. When this inflammation and swelling are overcome by pressure and antisepsis, the tubes become patulous again. The intra-abdominal pressure will cause fluid in any pendant portion of the tube to ascend into the uterus. The above procedure can be carried out in three different ways: 1, By gradually packing with gauze without anæsthesia; 2, by rapid dilatation of the cervix and packing with gauze after curetting—this is done under anæsthesia—3, his own method of dilating by means of antiseptic or sterilized elm-bark tents. These tents are small strips of elm bark made just long enough to enter the cervix completely and not press on the fundus. They should be kept in an alcoholic solution or bichloride of mercury, 1 to 4,000, and have a short string attached, by means of which they may be withdrawn. They are partially broken in a number of places for the purpose of making them more pliable. They may be dipped into glycerine or water just before introduction. These tents may be used when it would be impossible to pack with gauze. He had treated twenty or more cases during the past year, and does not recall one in which he did not get some discharge from the tent. All of the cases were either cured or very much benefited.

Inflammatory Disease of the Uterus and Appendages and of the Pelvic Peritoneum.—Dr. William W. Potter, of Buffalo, presented a communication with this title. He began by recalling the well-known fact that the pathology of pelvic disease has been entirely reconstructed since 1860, and that now we had come to regard inflammation of the pelvic peritoneum as generally symptomatic of disease of the ovaries or Fallopian tubes, or both. Mr. Tait, within the last ten or twelve years, together with men who have worked abreast of him—some of whom are members of this Association—have driven out the theory of pelvic cellulitis that for so long held sway, and now peri- and parametritis have been dropped from the gynecological vocabulary. The struggle has been a long one, but abdominal surgeons have demonstrated the truth of this proposition, viz., that pus originating outside of the tubes or ovaries in the non-puerperal state is a very rare condition, and that speaking generally pelvic are pus tubes. The largest number of women in the consulting rooms of gynecologists are those suffering from pelvic inflammation or its residues, hence the importance of the subject under discussion cannot be overestimated. But, he asserted, it is only within the past seven or eight years that anything like uniformity of opinion as to the causes and proper treatment of pelvic inflammation have been adopted. Now, just as we are beginning to agree as to the essentials governing these cases, we are told by a number of agreeable gentlemen who call themselves conservatives that these diseases do not demand operation, but that they can be cured in most instances by tentative measures, such as diet, rest, electricity, and the like. By denouncing the work of abdominal surgeons as unnecessary mutilation, and stigmatizing it as castration or unsexing women, they have created a panic among the medical journals that is reaching far into the ranks of the profession. The effect of this is to turn back the wheels of time and stay the advance of progress, with harmful results to suffering women. It must be admitted that these so-called conservative men are clever, which makes their subtle and dangerous doctrine all the more damaging in its results.

Dr. C. A. L. Reed, of Cincinnati, discussed the clinical history of inflammatory disease of the uterus and appendages and of the pelvic peritoneum; Dr. L. S. McMurtry, of Louisville, the causation and pathology; Dr. James F. W. Ross, of Toronto, diagnosis and prognosis; Dr. M. Rosenwasser, of Cleveland, the treatment, along with Drs. A. Vander Veer, J. Henry Carstens, and Dr. Joseph Price.

Pus in the Pelvis and Abdomen—its Diagnosis and Treatment.—Dr. Joseph Hoffman, of Philadelphia, said that pus in the abdominal and pelvic cavities had been treated and considered with far more leniency than pus anywhere else in the human economy. It was the tramp manifestation of all disease. He considered briefly the various organs in which pus makes its appearance, and in the order of frequency he mentioned the kidneys, appendix vermiformis, tubes and ovaries, liver, pancreas, and spleen. Each case should be treated according to the demands it makes and according to its complications. There was no use in doing an ideal operation and have the patient die when it is over. Ideal work was that which gives the best result in the line for which it was done. Surgery of the abdomen was a work of self-denial, of trial, of unexpected complication, and lurking disaster. He best can rise to it who has for his motto, "My Patient. Nothing but for the good of her who trusts me." Self-seeking carelessness of lives has its place in the carnage of internecine strife, not in the shadowy sorrows of suffering humanity, of dying women.

A New Operation for the Radical Cure of Inguinal and Femoral Hernia.—Dr. C. A. L. Reed, of Cincinnati, described the operation as follows: The incision in inguinal hernia is made from a point two inches above Poupart's ligament, midway between the anterior superior spinous process of the ilium and the spine of the pubis, obliquely downward and inward as nearly as possible consistent with the access of the inguinal canal to a point at the base of the scrotum. The dissection is then carried into both scrotal and pelvic cavities. The protruding viscera is then reduced and carefully inspected after being brought out above. The sac is then carefully dissected from its scrotal connections and reversed by invagination. It is then opened by two incisions, one toward the pubes, the other toward the ilium, being thus converted into an anterior and a posterior flap. The cord is now dissected loose and placed in the canal, now denuded of its peritoneum at its outer angle. The internal ring is closed by several interrupted sutures, animal or buried silk, these sutures being applied beneath the peritoneal flaps formed by splitting the sac, care being taken that in the closure of the ring undue pressure shall not be brought to bear upon the cord. The posterior peritoneal flap is now excised, the stump

being ligated should there be any necessity for doing so. The anterior flap is carried across the now obliterated internal ring, and stitched by interrupted sutures to the posterior parietal peritoneum. The external ring is now closed by passing a number of sutures through its pillars externally to the cord, which is now fixed in the internal (pubic) angle of the outlet of the canal. The incision into the abdomen is closed by interrupted figure of eight sutures, the internal loop embracing the peritoneum, the aponeurosis of the transversalis and of both oblique muscles, and the external loop embracing the superficial fasciæ, fat, and skin. These sutures should not be more than three-fourths of an inch apart. The incision into the scrotum may be closed in the ordinary way. Drainage should not be employed except in the presence of marked oozing or obvious infection.

Ovariotomy.—Dr. A. Vander Veer, of Albany, presented a report of one hundred and forty five operations done for removal of ovarian tumors and pathological conditions associated with the ovaries and uterine appendages only. He gave a careful review of the subject of the preparation of patient, embodying all the strong points pertaining to the technique of such work, placing great stress upon the importance of the room in which the operation was to be done being put in a thoroughly aseptic condition, and thorough cleanliness of the patient herself. The operations comprise all the varieties of pathological conditions met with in connection with the ovaries and tubes. The histories of the cases were somewhat interesting. Thirty-nine gave a history of phthisis, fifteen of cancer, fifty-seven of irregularity of menstruation. The mortality amounts to eleven per cent. While not criticising adversely the methods of other operators in closing the wound by means of different rows of sutures, kangaroo tendon, and other forms, yet he has no reason to give up his usual method of closing the wound by deep sutures of silk worm-gut, placing them three or four to the inch, taking in carefully only a margin of the skin, a portion of the fascia and muscles, and not to exceed one-quarter of an inch in width of the peritoneum itself, placing much stress upon the importance of careful, thorough, complete apposition. The causes of death in the seventeen cases were as follows: Obstruction of the bowels due to a coil of small intestines becoming attached to the stump of the pedicle, causing death on the fourth and fifth day, two cases. Septic peritonitis, two cases. Immediate hemorrhage from the pedicle, slipping of the knot, within six hours after the operation, though the wound was reopened, the vessels secured, abdomen flushed, and hemorrhage controlled, one case. Undoubted hemorrhage from the pedicle, causing general peritonitis, although no distention of the bowels was present, death on fourteenth day, one case. Shock within twelve hours after operation, one case. Shock within twenty-four hours after operation, one case. Autopsy in both cases revealed everything in good condition. Pulmonary infarction on sixth day, one case. Aggravated diabetes, one case. Exhaustion on the sixth day, no other apparent cause found, one case. Another case of exhaustion on the third day, symptoms in the last two cases, including an autopsy not revealing any other cause. Multilocular ovarian cyst, tapped twice, operation complicated with four months' pregnancy, one case. Puerperal septicæmia, one case. Intestinal obstruction on twenty-first day, one case. Advanced age complicated with the recent effect of an attack of la grippe, one case. Delayed operation in a case of extra-uterine pregnancy possibly four months, one case.

Hydrosalpinx.—Dr. A. H. Cordier, of Kansas City, read a paper with this title. He said articles had appeared in medical journals by the so-called conservative writers in the last few months, in which aspiration or catheterization of the Fallopian tubes filled with liquid of any character had been advocated as a procedure of relief and cure. Such articles had engendered a retrograde tendency on the part of many, and it is sure to be at the expense of an increased mortality from subsequent operative procedures to cure these cases after abandoning the unsurgical and uncertain tinkering. Hydrosalpinx had been looked upon as the least hazardous of all inflammatory results to the Fallopian tubes. The writer claimed that hydrosalpinx was a sequel of some old inflammatory diseases of the tubes, an offspring of a virulent process that had wrought permanent and irreparable injury to the delicate structures of the tubes. The writer did not consider hydrosalpinx as a retention cyst. Cases were rarely diagnosed prior to operation. A digital examination of one of these cases causes less pain than is produced in examining a pyosalpinx. In one case, occurring in the essayist's practice, the uterine extremity of the tube was largely dilated and filled with a clear fluid, while in the ampulla there existed a collection of pus, separated from the clear fluid by a closed stricture.

Inflammatory Disease of the Uterus and Appendages under Various Modes of Treatment. — Dr. Joseph Price, of Philadelphia, said that the methods of treatment of pelvic disease may be broadly classed as those that are proved, and those that are experimental. Many of the operations now successful were formerly failures because of the insufficient knowledge of how to deal with a wounded gut, how to make an anastomosis, or to do a bowel resection. Hence it is to be put down as a postulate in pelvic surgery that no man has a right to attempt it who does not know how to deal with all the complexities of intestinal surgery. To know when to stitch and when not to stitch the intestine is as necessary as to know when and when not to operate. The leaving of pus-tubes to recover of themselves is just one step removed from stuffing them with gauze and trusting to Providence. To puncture and evacuate and stitch a suppurating cyst—say a real ovarian cyst—would be derided out of sight, and yet, said the essayist, we have operators who do not hesitate to do this with the smaller pus-tube.

Dr. George H. Rohe, of Catonsville, Md., said that conservative surgeons were very much shocked at first by the proposition to remove the uterus together with the adnexa in cases of inflammatory disease in the pelvis. However, the operation has won its way against opposition, and must now be considered as an elective procedure in cases of extensive suppuration with adhesion, and especially in those cases, so numerous, in which the endometrium is likewise the seat of purulent inflammation. Gonorrhœal, puerperal, or tubercular inflammations and dense adhesions, with displacement of the uterus, demand removal of this organ as well as of the appendages if permanent good results are expected. Total extirpation of the uterus and appendages by the vaginal method for pelvic suppuration was first done by Pean in 1886. Pean, Segond, Doyen, Jacobs, and Landau have performed the operation upward of five hundred times with an average mortality of less than five per cent. The operation by the vagina is easier than abdominal extirpation, and in the hands of most surgeons who have performed it, is attended by less shock. It leaves the parts in condition for perfect drainage. The after-treatment is simple. Patients may sit up in a week or ten days. Forceps are preferred to the ligature for hemostasis.

How Shall we Deal with Pelvic Inflammatory Troubles?—Dr. W. B. Dorsett, of St. Louis, Mo., presented a paper with the following conclusions: 1. Pus in quantities is hard to deal with down in the pelvis in laparotomy cases, and, if possible, should be evacuated prior to taking out the tubes and ovaries, either through the cul de-sac of Douglas, or if between the layers of the broad ligament, at the side of the uterus, laparotomy should be done at some future time. 2. Pus sacs in the tube near the uterine end of the tube can be evacuated through the uterus by packing the horn. 3. Parametritis or cellulitis of the ancients is, except under rare instances, a secondary trouble due to a foul uterine cavity. Clean

out the cavity and stop the source of poison, and you do the best thing possible to be done.

The Relations of Renal Insufficiency to Surgical Operations.—Dr. C. C. Frederick, of Buffalo, reported observations based on nearly three hundred operations at the Buffalo Woman's Hospital, supplemented by the experience of several prominent operators. By renal insufficiency is meant any condition of the urine which shows deficient elimination of waste products, whether from functional inactivity or from disease of the kidneys. Whether renal insufficiency is a contra-indication to operation depends on the consideration of three factors: 1. The amount and nature of the insufficiency. 2. The character of the lesions for which operation is proposed. 3. The causal relation which the patient's disease holds to the renal insufficiency. Every patient's urine before operation should be collected for twenty-four hours, except when operation is urgent, as in ruptured ectopic pregnancy, for example. In examination of urine the important fact to ascertain is, whether the kidneys are crippled, or in full or nearly normal functional activity. Women with chronic endometritis are especially liable to functional insufficiency. Most gynecological patients who are run down physically present the same condition. A knowledge of the state of the patient's kidneys is of value to the operator and anæsthetizer. Renal insufficiency renders the patient more liable to shock from operation, and a slower convalescence.

The Cause of Thirst following Abdominal Section.—Dr. Eugene Boise, of Grand Rapids, Mich., after stating the generally accepted proposition that thirst is a sensation indicating that the tissues of the body are in want of more water, argues that the sensation as felt in the mouth and throat is reflex, and that the real point from which the sensation arises is in the abdominal viscera; that from these the sensation is conveyed to the consciousness by fibres of the sympathetic system of nerves; that while ordinary thirst is caused by the withdrawal of water from the tissues to refill the veins depleted by excessive perspiration or otherwise, the thirst following abdominal section is caused by the withdrawal of water from the abdominal viscera to fill veins partially collapsed by reason of diminished blood-supply because of contraction of the arteries of the viscera. He briefly stated those physiological facts which are universally accepted or have been experimentally proven on which the theory is based: 1. Thirst is a sensation indicating that the tissues need more water. 2. The sensation felt in the throat is reflex. 3. The origin of the sensation is believed by leading physiologists to lie in the sympathetic system of nerves, because (*a*) no cerebro-spinal nerves can be found which convey the sensation to the consciousness, and (*b*) nutrition is presided over by the sympathetic system, and thirst is a disturbance of nutrition. 4. The origin of the sensation is probably from the abdominal organs, because (*a*) these are so rich in sympathetic fibres, and (*b*) introduction of water into the stomach so instantaneously allays thirst. 5. The sensation invariably follows the withdrawal of any considerable amount of fluid from the body; the withdrawal of such fluid causes proportionate collapse of veins and capillaries. 6. Capillaries tend to remain at normal tension, and when suddenly collapsed in any degree attempt to regain that tension by taking water from the surrounding tissues. 7. Irritation of sympathetic nerves causes contraction of the arterioles supplied by such nerves. 8. Sudden contraction of the arterioles supplying any organ is followed by lessened tension in the capillaries and small veins of that organ. 9. Abdominal section invariably causes direct and reflex irritation of the abdominal sympathetic nerves. 10. Such irritation causes contraction in some degree of the arterioles of the abdominal viscera, with subsequent lessened tension in their capillaries, and compensatory withdrawal of water from their tissues. And is it not probable that such circulatory disturbances give rise to the sensation of thirst?

President's Address.—Dr. Rohe then delivered his address. He selected for his subject "Intestinal Obstruction following Operations in which the Peritoneal Cavity is Opened." He said obstruction of the bowels causes between one and two per cent. of the deaths following ovariotomy and other operations involving opening of the peritoneal cavity. Sir Spencer Wells lost 11 out of his first series of 1,000 cases of ovariotomy from this cause. Fritsch places his mortality from ileus post laparatomian at 1.6 per cent. Klotz has reported 31 cases of intestinal obstruction, with five deaths due to this complication, in a series of 421 abdominal sections, and 148 vaginal extirpations of the uterus. The speaker had seen a case where the small intestine was doubled upon itself, and so firmly adherent that the gut was entirely impervious. Similar cases have been reported by Skutsch and Tuttle. Joseph Price quotes an interesting case from Louis, where an adherent ovarian cyst, emptied by the trocar, so dragged upon the bowel as to cause obstruction. Volvulus sometimes occurs after abdominal section, but probably only after some previous adhesion or constriction of the bowel. Two cases reported by Nieberding illustrate this. The symptoms of intestinal obstruction post laparatomian are essentially the same as those of primary obstruction. Klotz has had much success in treating acute obstruction following abdominal section by the following method: As soon as symptoms indicating obstruction appear, he washes out the stomach with from four to six quarts of warm salt solution. Should this fail to relieve the symptoms he repeats it, and then passes into the stomach through a tube a large dose (one and a half to two ounces) of castor-oil. In all cases so treated the active peristaltic movements set up caused passage of flatus and fæces within ten hours. Evidently it is only in cases of fresh and friable adhesions that this method can be successful. Rectal injections of water or air may at times be curative when the obstruction is due to intussusception, volvulus, or soft adhesions of the lower portion of the intestine, but where the obstruction is due to cords or bands they can manifestly be of no avail.

Third Day, September 21st.

Nephrectomy.—Dr. L. H. Dunning, of Indianapolis, Ind., reported four cases of this operation, of which the following is a synopsis:

Case I.—Nephrectomy for painful movable kidney. An unsuccessful nephrorrhaphy had been done two and a half years previously. The patient had been bedridden four years. A lumbar nephrectomy was done, the patient recovering and obtaining entire relief from pain. The author deplores the necessity of removing a healthy kidney only because movable and painful. He thinks that the success of recent methods for anchoring the kidney will obviate the necessity of such a procedure.

Case II.—Nephrectomy for persistent hydronephrosis due to stricture of the ureter at its pelvic extremity. The tumor was mistaken for an ovarian one. It was removed by a median abdominal incision.

Case III.—Sarcoma of the kidney in a child two years old. Nephrectomy and recovery. The tumor had been discovered only four weeks previously. A median incision (abdominal) was employed.

The writer has collected the histories of twenty cases of sarcoma of the kidney operated upon since 1885 in children under five and a half years of age. Of these five perished, and fifteen survived the operation, thus showing a mortality of twenty-five per cent. This is a surprising decrease in mortality, and is probably due to improved details in technique rather than to radical changes in the method of operation.

Case IV.—Nephrectomy for uretero-vaginal fistula following vaginal extirpation of a cancerous uterus. The operation was done four weeks after the hysterectomy. The ureter was torn across in enucleating a nodule of cancerous tissue from the folds of the broad ligament on removal of the uterus. Nephrectomy was done four weeks

subsequently because of intermittent closure of the fistula and the morbid mental condition of the patient. The cancer had recurred in seven weeks, and patient died three months later of exhaustion and septicæmia.

Progressive Cutaneous Atrophy of the Vulva (Kraurosis Vulvæ).—Dr. C. A. L. Reed, of Cincinnati, read a paper with this caption. He reported six cases in which the pathological and clinical features were characteristic. The first changes obvious to the naked eye consist of small vascular areas around the introitus vaginæ. These areas are not elevated, as if seats of merely inflammatory engorgement, but are slightly depressed relatively to the adjacent epithelial surfaces. They are exquisitely painful to the touch, and efforts at sexual intercourse are generally agonizing and futile. About this same time inspection will reveal a narrowing of the vaginal orifice associated with diminished elasticity of the structures. The cutaneous or muco-cutaneous surfaces will now be observed to have lost a certain proportion of their pigment, giving them a more or less translucent appearance, which increases until it becomes so transparent that the larger capillaries and minute ecchymoses may be readily discerned beneath it. The skin thus affected becomes tense, effacing in a more or less degree all of the normal folds of the vulva and narrowing the vaginal orifice until, in the case of a multipara, "incredulity may be excused when the patient states that she has borne children."

Knowledge relative to progressive cutaneous atrophy of the vulva is too nebulous to justify final conclusions. That which seems to be conclusively demonstrated may be summarized as follows: 1. Progressive cutaneous atrophy of the vulva is a distinct disease. 2. It is of very rare occurrence. 3. It is essentially inflammatory in character, differing from other inflammations of the skin in the marked progressive atrophy which succeeds the stage of hyperæmia and infiltration. 4. It is limited in its manifestations to the vulva. 5. It is manifestly not of syphilitic origin. 6. Its etiology is so obscure as to suggest a primary causal lesion in the trophic nerve-supply of the vulva. 7. The affected areas may be successfully excised.

Dr. George F. Hulbert, of St. Louis, read an interesting paper on "The Element of Habit in Gynecic Disease," an abstract of which would not do justice to its author.

One of the interesting features of the meeting were remarks on intestinal anastomosis and a beautiful demonstration of the uses of the Murphy button by Dr. J. B. Murphy, of Chicago.

Restoration of Intestinal Continuity Without Mechanical Devices.—Dr. W. E. B. Davis, of Birmingham, Ala., said that the purpose of this paper was not to claim originality for any special technique, but rather to consider the various operations and to show that mechanical devices can in a great proportion of cases be better dispensed with by the surgeon who has had much experience in intestinal work, either on the lower animals or on the human intestine. Still there is a place in anastomotic work for bone plates, catgut plates, and other devices of this sort, and the Murphy button, but the experienced surgeon will find the field of their application very limited. These devices are of great assistance to the surgeon of limited experience in this class of work, and should be recommended in the event of an operation having to be done by one who has not had the opportunity of becoming familiar and skilled in suturing of the intestines. The Murphy button is a valuable device for cholecystenterostomy, and is superior to anything yet suggested for that purpose. The button is so small that it can pass through the intestine without causing any trouble, and it can be depended upon with almost absolute certainty to produce satisfactory adhesion and a competent opening between the gall-bladder and intestine. The end-to-end operation or circular enterorrhaphy is a dangerous procedure, from the fact that injury to the mesenteric border is liable to produce sloughing, and it is never possible to say that a surgeon will not have this complication follow the operation. Besides any stitch method in the end to end operation requires so much time that it should be objected to usually on that account. The Murphy button can be used very satisfactorily for this purpose, and where end-to-end operation is to be resorted to, Dr. Davis is of the opinion that this device could be used unless the surgeon is an expert in intestinal suturing. The operation of Abbe is a plausible one, but it is not so reliable as the one which has proven satisfactory in the experimental work of the author. The incision is not made so long as in the case of Abbe, and is about three inches in length. In the case of gastro enterostomy the intestine and stomach are both brought into the wound, and the incision three inches in length made in both. Interrupted sutures are taken through coats of the bowel and stomach around the entire length of the incisions and are tied on the inside, the last stitch being tied on the outside and turned in. A continuous outside safety stitch is then taken through the peritoneal and muscular walls. In bringing the small intestine together the same procedure is followed, the interrupted through-and-through stitch of large silk being taken instead of an over-hand stitch, as recommended by Abbe, and only one row of outside sutures, which may be interrupted or continuous, preferably the latter. This operation can be done very quickly, and is more reliable than the various ones with mechanical aids to anastomosis. Particularly is this method of operating valuable in cases of simple stricture of the bowel, and there will be a great many of these cases now inasmuch as there are more operations done on the intestines.

Dr. F. Blume, of Allegheny, Pa., reported a very interesting case of cholelithiasis in a woman, thirty-seven years of age, in which the number of calculi removed, besides minute concretions, was one hundred and twenty-three, weighing fourteen drachms. The stone removed from the gall-bladder weighed four and three-quarter drachms.

The Reason why Patients Recover from Tuberculosis of the Peritoneum after Operation.—Dr. Robert T. Morris, of New York, stated that he had been experimenting with a view to determining the reason for the cure of tuberculosis of the peritoneum after operation, it being a well-known fact that more than eighty per cent. of these cases recover as a result of simply exposing the peritoneal cavity to the air. Dr. Morris collected fluid from the abdominal cavity of patients with tuberculosis of the peritoneum, placed it in an incubator for forty-eight hours, and developed the bacteria of putrefaction which would ordinarily enter in such fluid exposed to the air. From this fluid Dr. Eiloart then isolated a toxalbumin, the product of the growth of putrefactive bacteria in this peritoneal fluid. The toxalbumin employed to destroy tubercle bacilli in culture-tubes destroyed them very promptly. A control experiment, which was not yet completed, was in progress for determining if these bacteria were absolutely dead. However, enough had been proven to show that tuberculosis of the peritoneum recovers after operation because putrefactive bacteria produce a toxalbumin in the fluid which is fatal to tubercle bacilli in the peritoneum. The reason why it is more effective in curing cases of tuberculosis of the peritoneum than tuberculosis of the knee-joint is because the lymphatic anatomy of the peritoneum is such that any toxic agent absorbed by the lymphatics of the peritoneum is brought into close contact with the entire structure; whereas in the knee-joint the lymphatics are fewer and with more definite channels.

Election of Officers.—*President*, Dr. J. Henry Carstens, of Detroit, Mich.; *First Vice-President*, Dr. W. E. B. Davis, of Birmingham, Ala.; *Second Vice-President*, Dr. Henry Howitt, of Guelph, Ont.; *Secretary*, Dr. William Warren Potter, of Buffalo, N. Y.; *Treasurer*, Dr. X. O. Werder, of Pittsburgh, Pa.

The place of meeting for 1895 was referred to the Executive Council for decision.

Correspondence.

OUR VIENNA LETTER.

(From our Special Correspondent.)

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY AT BUDAPEST—FOREIGN DELEGATES PRESENT—OPENING OF THE INTERNATIONAL HYGIENE EXHIBITION—RECEPTION OF THE DELEGATES BY THE ARCHDUKE CHARLES LEWIS—THE SEMMELWEISS MEMORIAL—WORK OF THE SECTIONS—THE CAUSE OF CHOLERA—CREMATION—IMMUNITY, NATURAL AND ACQUIRED—TYPHOID FEVER AND THE WATER SUPPLY.

VIENNA, September 13, 1894.

THE Eighth International Congress of Hygiene and Demography, which has just been closed, was brilliantly successful. About three thousand members, among whom representatives from various countries of the world participated in it. The number of ladies present was about three hundred. The Congress was opened on Sunday, September 2d, at eleven o'clock, by the Archduke Charles Lewis of Austria, in the place of the Emperor, who is the protector of the Congress, but who was prevented from being present at the opening ceremonies. The Archduke emphasized the great importance of the Congress, which served the purposes of humanity and civilization. The endeavors of the members of former international hygienic congresses to practically realize the resolutions of the Congress were partly crowned with success, and on this occasion the Archduke alluded to the fact that in various states new, regular, and obligatory courses on the principles of hygiene had been introduced into the public school instruction.

The Archduke, who hitherto had spoken in French, then began to speak in Hungarian, and saluted the beautiful capital of Hungary, congratulating her on the distinction which the Congress had bestowed on her by chosing their city as the place of present meeting. He did not doubt that the Hungarians would sustain on this occasion their world-wide reputation for hospitality.

The Archduke Charles Lewis then declared, in the name of the King-Emperor, the Congress opened. Among the foreign representatives who afterward addressed the Congress I will only mention Professor Leyden, of Berlin, who spoke in German; Professor v. Inama-Sternegg, of Poland (German); Dr. Bergerau, of France (French); Dr. Billings, of the United States (French); Dr. Crocq, of Belgium (French); Dr. Corfield, of England (English); Professor Don Amalis Girneno, of Spain (French); Professor Bambos, of Greece (French); Dr. Luigi Bodis, of Italy, (Italian); Professor Erismann, of Russia (Russian and French); Dr. Joao Lopez de Silva Martins, of Portugal (French); Dr. Hansen, of Norway (French), and others.

At 1 P.M. the International Hygienic and Demographic Exhibition was opened in the "Polytechnicum." This was divided into six sections, namely, sewage of towns, general exhibition of Germany, Austria-Hungary, and various other countries, cremation, and balneology.

On Sunday evening the Congress was received at court by his Imperial and Royal Highness the Archduke Charles Lewis, where a splendid banquet had been prepared for the guests. This meeting presented a particularly picturesque appearance owing to the different dresses of the representatives of the various states. The President of the Congress, State Minister of the Interior Hieronymi, presented the delegates of the foreign states and the other prominent members of the Congress to the Archduke, who addressed them in French and German, directing to them questions referring to their specialties and their countries. I wish to mention on this occasion as an interesting incident of the Congress the so-called "Semmelweiss-Sitzung," held on Sunday afternoon in the buildings of the Academy of Medicine. Semmelweiss was the first to introduce antisepsis into obstetrical practice, but during his life his doctrines attracted little favorable notice, and he was even persecuted by his colleagues. Medical science had long ago acknowledged the immortal services which Semmelweiss had rendered to the science of obstetrics and to humanity, and Hungary, which is always ready to reward the merits of her great men, decided on doing the last, and pay due homage to her great citizen, who was born at Budapest. A committee had been established for the erection of a monument in honor of Semmelweiss, and in the meeting now referred to, Professor Kézmarszky, of Budapest, president of the committee, made a report. A sum of 12,586 florins had thus far been collected; but subscriptions toward the erection of the monument were still being taken. Professor Ferdinand Hueppe, of Prague, delivered an address on Semmelweiss, which was received with great enthusiasm by all present. The members then betook themselves to the cemetery in which Semmelweiss is buried, to assist at the ceremony of the unveiling of his monument. On this occasion Professor Hueppe spoke again, and Professor Chautemesse, of Paris, delegate from France, answered in feeling words, saying, among other things, that if all the children whose lives Semmelweiss had saved were still living, the city of Budapest would be unable to hold them all.

On Monday the sections of the Congress proceeded to their work. There were nineteen sections, and the number of the papers announced amounted to nearly eight hundred, all of which, of course, could not be read. The sections on hygiene were most frequented, and among these, particularly the first, second, and third sections, in which questions of bacteriology and blood serum therapy were most eagerly discussed. Among the lectures which were delivered on the first day, that of Princess Christian of Schlesweig-Holstein, on the advances in nursing science, as well as on the spread of sanitary and hygienic knowledge in England during the past few years, attracted great attention.

In the other sections the discussions on diphtheria and cholera were among the most interesting. The discussions upon cholera were opened by Dr. Baker, of Paris, and Professor Gruber, of Vienna. The latter pointed out that besides the bacillus of Koch, there must still be some others. The famous Paris scientist, Professor Elie Metschnikoff, spoke to the same effect, and said that the vibrio of cholera could not be the sole cause of cholera. There were people who had ingested pure cultures of cholera bacilli without becoming infected with the disease. He had found in the stomach and the intestines other bacteria, which either favored or checked the development of the specific microbe. Those in whose stomach or intestines there were bacteria which favored the development of the cholera bacillus became affected with cholera, while those in whose system the antidotal bacteria were to be found remained immune. Professor Metschnikoff added that he had thus succeeded in provoking cholera in animals which had hitherto been thought to be immune.

The Section on State Hygiene, which was presided over by Professor Kratter, of Graz, formulated the following unanimous resolutions with reference to cremation:

1. The least dangerous and most rapid, and at the same time cheapest, method of disposal of dead bodies is cremation.

2. Cremation is the best substitute for suitable cemeteries where these are wanting.

3. Cremation is of the greatest importance for the welfare of peoples in times of epidemics.

4. The governments of the various countries must be invited to permit of a facultative legal cremation, and thus provide for an excellent means of prophylaxis against epidemics.

In the first section of hygiene Professor Hans Buchner, of Munich, delivered a lecture on the subject of immunity and immunization, in which he arrived at the following conclusions:

1. The natural power of resisting infections, the so-called "natural immunity," is due to quite different conditions and causes than the artificial or acquired immunity. Both are conditions which *in principio* differ from each other, and which must scientifically be separately considered and inquired into, though, practically, they may occur simultaneously in the same individual.

2. The natural power of resistance is due, on the one hand, to the bactericidal influence of certain dissolved constituents of the organism, the so-called "alexines," and, on the other hand, to a congenital power of resistance of the tissues and the cells of the body against bacterial poisons. This natural power of resistance cannot, as a rule, be conferred through the blood on other organisms.

3. The leucocytes play an important part among the natural means of protection of the organism, but they do not do so through their virtue as phagocytes, but only by means of dissolved substances which they secrete. Phagocytosis is only a secondary appearance.

4. The immunity which is artificially produced, or which is acquired later in life, is due to the presence of modified specific bacterial products, which have become deprived of their poisonous influence — the so-called "antitoxines;" these are to be found either in the blood or in the tissues of the body, or in both. The antitoxines, and also the immunity produced by their action, can be transmitted by means of the blood or the milk.

5. The effect of the antitoxines is not due to direct destruction of the specific bacterial poisons by mutual contact. The effect is only produced within the body, and by means of the same, as the faculty of the living parts of the body to resist the specific poisons becomes thus increased.

Dr. I. Polak, of Warsaw, read a paper on "The Relation between Typhoid Fever and Drinking-water." He presented tables of the mortality in Warsaw since 1877, which showed that among the infectious diseases, such as small pox, measles, scarlet fever, typhoid, typhus, diphtheria, and croup, the mortality from typhoid fever had considerably diminished since 1887, when the new water-works were established in that city, and new measures for sewage were adopted. During the period from 1879 to 1886 the mortality from typhoid fever in Warsaw amounted to from 60 to 105 deaths in 100,000 inhabitants, whereas in the period from 1887 to 1893, it only amounted to from 18 to 30 deaths. Another table which Dr. Polak showed related to gastro enteritis, pneumonia, phthisis, and bronchitis. In this case the regular decrease in the mortality from pulmonary phthisis and bronchitis was also alleged as being the result of the better conditions of the drinking-water in that city.

The festivities before and during the Congress were numerous and brilliant, and gave convincing proof of the Hungarian hospitality.

IS MALARIA A WATER BORNE DISEASE?

To the Editor of the Medical Record.

Sir: I wish to add my experience and observation to the line of inquiry pursued by Dr. W. H. Daly, of Pittsburg, Pa., in his most excellent paper in the Medical Record of September 15, 1894 regarding malarial infection. In the summer of 1881, while employed under the directions of Major G. J. Lydecker, U. S. A., in the construction of the Kampsville Lock (Illinois River Improvement), Kampsville, Calhoun Co., Ill., I had occasion to observe the effects of drinking-water on persons temporarily residing in this malarial district, as well as upon the native inhabitants. The land immediately adjacent to the lock site, was known as bottom-land—it was overflowed at each high water season — and was poorly drained, being very flat. Water stood in the bogs or swamps until the dry weather of summer had completely evaporated it. Drinking-water was obtained for the men employed in the construction of the lock foundation from drive-wells, put down to the depth of about twelve or fifteen feet. The men employed on the dredge and tow-boats, and the officers, used filtered river-water.

Among the many laborers who sought employment were forty Swedes, who had arrived in this country, from their native land, about ten days before coming to the lock; they were a vigorous, well nourished body of men, eager for work. They took board in quarters near the lock, and drank water from the drive-well. Within ten days one of them was taken down with malaria, and before two weeks had elapsed ten or more had succumbed; one died and two were seriously ill. At the end of a month but three were able to continue work; one of these had no malarial symptoms at all; he worked on one of the boats, where he also lived; he drank filtered river water. Now all of these men seemed peculiarly susceptible to malarial infection, and as quickly as they could returned to Chicago to escape its ravages. The men who worked on the boats escaped the disease. The natives who drank of the well-water were not so much affected, yet quite a number of them had to quit work. The wells used by the natives, however, were located on the edge of the bluffs, about one-half mile from the river. Here we have, I think, marked evidence of the infection coming from drinking-water; for all the employees, officers and all, were situated under like atmospheric conditions, and exposed to the same heat, etc., during the day, yet those who used river-water escaped while those using drive or open well-water were afflicted. Some three and one half years spent in engineering work on the Illinois River confirmed my belief in the possibilities of infection from water-supply rather than from atmospheric conditions.

I endorse Dr. Daly's views,

Frank P. Norbury, M.D.

Jacksonville, Ill.

IS IT TIME TO CALL A HALT?

To the Editor of the Medical Record.

Sir: It is a continual surprise to me the indifference of many oculists about the accurate adjustment of glasses. Many jewelry stores have professional refractionists, and a widely circulated jewelry monthly devotes several columns each issue to the instruction and answering absurd queries from men in stores who fit glasses. I know reputable physicians who send patients to these stores because they get better work done than some oculists do. Isn't it about time more attention was paid to accurate refractive work, or are we to lose sight of this in the chase after some *ignis fatuus* like trifling muscular defects.

The phoria craze has reached the stage where conservative men are met with pitying smiles if they venture to suggest that some cases of asthenopia can be relieved by proper glasses. The last two days of the Pan-American Congress the ophthalmological section was in the hands of the phoria men, who pounded the table in their enthusiasm concerning wholesale muscle-cutting. They stated that many operations were often necessary, and admitted that the result was not invariably satisfactory. Their ideas about glasses were inferred when a well-known disciple said that a weak myopic lens should be given the patient if it seemed comfortable, no matter whether the victim was myopic or hyperopic.

No one denies that muscular insufficiency occasionally calls for operation, but it is a pity to lose sight of the good that can be accomplished by proper glasses. If one eye sees as well as the other, if both are equally relieved of strain, then the glasses are right, and the muscles will adjust themselves in the majority of cases. Such being a fact, which would seem more sensible, fit the eyes properly, or hack the muscles forty times with no assurance but that another forty may be necessary.

Richard H. Satterlee, M.D.

189 Delaware Avenue, Buffalo, N. Y.

THE ANTIDOTAL ACTION OF POTASSIUM PERMANGANATE IN OPIUM POISONING.

To the Editor of the Medical Record.

Sir: In your issue of September 15th I notice an article by Dr. C. Monroe McGuire, under the heading "Unsuccessful Employment of Potassium Permanganate in a Case of Morphine Poisoning," and in justice to Dr. Moor (the original claimant to the discovery of this antidote), who no doubt has become very tired of answering uncalled-for questions and criticisms upon a subject which has been very carefully explained, and by himself and others successfully operated, I would suggest that Dr. McGuire read Dr. Moor's original article in order to understand that his (Dr. Moor's) representations can in no way be called a failure as an antidote in the case he mentions.

It struck me at the time that Dr. Moor had very plainly and concisely pointed out to his medical brethren that after the ingestion of morphia in lethal doses, the administration of potassium permanganate would chemically oxidize and render inert the amount of the poison still in the stomach at the time of the administration; in other words, the part of the morphine with which it comes in direct contact. He does not claim that it has any other effect, and his best proof of the efficacy of the drug as a local antidote was his experimentations upon himself, which prove his absolute faith, which I think no one will question, and again, other prominent medical men have had very successful results from its use.

How are physiological or pathological effects of a drug to be determined except by such methods?

Many of our most important discoveries have been understood only by such means and accident, and I do not think Dr. Moor's results should be denied and decried until good grounds are had for so doing; and particularly upon the grounds given in Dr. McGuire's article, where the stomach had been relieved of every particle of the poison, both by emesis and into the circulation, previous to the administration of the permanganate. So what I cannot understand is, why permanganate should have been given at all in the case mentioned, for it is not claimed to be a physiological antidote, and at that time there was no use for a chemical action.

Under the circumstances I do not see why Dr. McGuire should have been surprised at a depressing effect upon a stomach and system so weakened by emetics and physiological antidotes, and in which there was no morphine.

Clarence Warfield, M.D.

Galveston, Tex.

THE MARRIAGE OF SYPHILITICS.

To the Editor of the Medical Record.

Sir: For the purpose of securing reliable statistics on the subject of the marriage of syphilitics, I desire to enlist the assistance of those of your readers who have had experience which will be of value in determining the period when this disease ceases to be communicable and inheritable. I shall, therefore, esteem it a great favor on the part of any physician who will send me answers to the following questions, and due credit will be given in a future publication to those who desire to aid me in this work.

1. What is the latest period, from the date of the initial lesion, that you have known the disease to be communicated by a patient who has been from the first under your observation?

2. What is the latest period, from the date of the initial lesion, that you have known (*a*) a syphilitic man, or (*b*) a syphilitic woman to become the parent of a syphilitic child?

3. Have you ever known syphilis to be either communicated or handed down, at a later period than four years from the date of the initial lesion, by an individual who has been constantly under your observation during that time?

In answering these questions I should like a brief but complete history of each case and an account of the treatment that has been pursued.

I hope by this means to obtain the experience of a large number of observers, and to reach a fairly reliable conclusion as to the time when we may safely permit our syphilitic patients to marry.

Yours very truly,

Burnside Foster, M.D.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 29, 1894.

	Cases.	Deaths.
Tuberculosis	135	83
Typhoid fever	33	10
Scarlet fever	21	2
Cerebro-spinal meningitis	2	2
Measles	8	2
Diphtheria	87	31
Small-pox	6	2

Mr. W. Salmon is the oldest member in years, as well as by appointment, of the Royal College of Surgeons of England. He was born in 1790, and was admitted to the College in 1809.

Myxœdema.—Dr. G. P. Marner, of Marion, Kan., in a paper read before the Kansas State Medical Society, on May 4, 1894, reports a case of myxœdema successfully treated with thyroid extracts. The patient was a married woman, aged thirty-eight, in whom the first symptoms appeared about ten years ago. The disease had progressed slowly but steadily. Treatment was begun on New Year's Day with the exhibition of a five-grain powder every day. From the beginning of the treatment she improved rapidly, and on April 28th was apparently cured. Her weight had decreased in four months from one hundred and seventy to one hundred and fifty pounds, and the transformation in her general appearance was so great that her most intimate friends scarcely recognized her.

Longevity in Russia.—In the province of Kieff, during 1893, there were fourteen deaths of persons over one hundred years of age. In the city of Kieff one man died aged one hundred and ten years, while within the suburban circle two women died aged respectively one hundred and two and one hundred and four years. In Berditcheff two men reached the ages of one hundred and one and one hundred and fourteen years respectively. In Vassilkoff another died in his one hundred and fifteenth year. In the same district there died a woman aged one hundred and five; in Svenigorodka, a man of one hundred and ten years; in Tarastscha, another one hundred and fifteen; in Uman, two men, aged respectively one hundred and six and one hundred and two years; in Radomytzel, two aged respectively one hundred and three and one hundred and seven; and lastly a man of one hundred and five years died at Tcherkassy. The united ages of these fourteen persons amounted to 1,489 years. A man is still living in Saratoff who has already celebrated 126 birthdays.

A Missionary to Lepers in Trouble.—Miss Kate Marsden, who achieved some notoriety some years ago as a missionary to the Siberian lepers, was recently accused of acts unbecoming a missionary. The charges were investigated by a committee in St. Petersburg, with the result that Miss Marsden has been called upon to give up, in accordance with a promise made at the beginning of the investigation, all decorations, letters, etc., bestowed upon her by royal and imperial well-wishers.

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THE NECESSITY OF INTERNATIONAL SANITARY REGULATIONS GOVERNING THE MIGRATION OF LARGE BODIES OF PEOPLE IN THE PREVENTION OF THE SPREAD OF CONTAGIOUS AND EPIDEMIC DISEASES.

ILLUSTRATED BY THE INTERNATIONAL SANITARY CONFERENCE OF PARIS, 1894 [1]

BY STEPHEN SMITH, M.D.,

NEW YORK.

THOSE diseases which are classified as contagious and infectious are the common enemies of mankind. Every human being inherits a predisposition to these affections. No one, therefore, is exempt from an attack, on proper exposure, by reason of nationality, civilization, rank, or condition. In their spread these pestilences have no regard for the lines which bound nations, but wherever man finds his home there they find a congenial soil for propagation.

The influence of these diseases upon the history of our race has always been disastrous. They have proved more fatal to human life than all other causes combined; they have destroyed the armies of conquerors whom no earthly power could resist; they have, indeed, obliterated from the earth, as by an omnipotent force, whole races of mankind. They have often given the death-blow to an advanced civilization, or have left a strange enduring impress on the intellectual life of great nations. The historian states that among the causes which brought about the fall of the might and civilization of Greece and Rome must be mentioned destructive pestilences which swept over the Eastern and Western Roman Empire during the period between antiquity and the Middle Ages (Ziemssen).

The problem of preventing and suppressing these scourges of the race has been studied exhaustively in ancient and modern times, but with very different degrees of success. To the ancient student their origin remained a mystery which no means at his command could penetrate. With all his research he could discover neither their causes nor the laws governing their propagation. One solitary fact of vast importance was impressed upon his mind by the abundant opportunities for observation, viz., that complete non-intercourse of the sick, and his personal effects, with the well was a reliable means of protection and prevention. Hence came the famous institution of quarantine, or forty days' isolation of vessels from infected ports, a period believed to be sufficiently long for the destruction of the contagium. Its true significance was non-intercourse of the sick with the well. This was, indeed, the only means by which a city could at that time protect itself from an invasion of the pestilence. And even now cities and states, when left to their own individual resources against epidemic diseases, find quarantine the most effective measure which they can adopt. It is true that the quarantine of to day differs greatly from the quarantine of the past. Formerly, time was the chief feature relied on to destroy the contagious principle, and hence the period of detention was of long duration. Now, detention is enforced only during the period necessary for the destruction of the contagium by germicides, or of the incubation of the germs of disease. Still, quarantine means the detention of the traveller and his effects, and of articles of commerce liable to convey infection.

Though the rigors of the ancient quarantine have been relaxed, it was not until within the last decade that there began to be a clear conception of a method of substituting for them measures far more effective, and comparatively free from inconvenience, either to traveller or to commerce. This was the co operation of the states exposed to the epidemic in well-concerted measures against a common enemy.

The first step toward international action in regard to public sanitation and maritime quarantine was taken, in 1847, by the French Government, which has always been foremost among the nations of Europe in advancing sanitary science. Preliminary to the calling of an International Sanitary Conference, she appointed medical sanitary agents in the East. The posts of observation thus created were at Constantinople, Smyrna, Beirut, Alexandria, Cairo, and Damascus. The information in regard to sanitary conditions in those cities derived from these sources formed the basis for the Conference of Paris, which was convened on invitation from the French Government in 1851. Twelve powers were represented by delegates at this conference. The results obtained were, a relaxation of the rigor of quarantine in Mediterranean ports, and a scheme of rational maritime prophylaxis.

Thus was inaugurated international hygiene, a system of sanitatary administration which seems destined to control, suppress, and finally exterminate contagious and infectious diseases.

Nine International Sanitary Conferences have since been called, and six have been held. The earlier Conferences were not fruitful of immediate results. The field of labor was new and unexplored, and diplomatic questions arose which greatly interfered with that harmony of action of states essential to success. The discussions of representatives of different states, did, however, improve the sanitary administration of each. But their greatest value appeared in the better understanding which the states of Europe came to have of the aims and purposes of each other when discussing measures of prevention against a common enemy. Mutual confidence was in a measure established, which led to far more effective work in future Conferences. This was apparent in the Conference of Venice, the seventh in the series, held in 1892, which was called to consider the means of preventing direct communication between Europe and the infected regions of India, by way of Egypt and the Mediterranean ports. The Conference succeeded, first, in regulating the duration and method of quarantine in the Suez Canal; second, in preventing the passage through the Canal of infected vessels; third, in requiring disinfection of suspected vessels; fourth, in creating the Council of Alexandria, with a preponderance of European influence.

The resolutions adopted by the Conference were embodied in an agreement which was signed by the plenipotentiaries and afterward ratified by the powers represented — the first formulated conclusions of any Conference made authoritative by the signatures of the plenipotentiaries.

Still greater progress was made toward the creation of

[1] Read at the Annual Meeting of the New York Medical Association, October 10, 1894.

international laws by the Eighth Sanitary Conference, which met at Dresden, March, 1893. The programme proposed for consideration the following subjects:

1. The duty of a Government when cholera is reported within its territory.

2. The measures to be taken when cholera exists in a neighboring country.

The Conference decided that the declaration of the presence of contagious diseases is obligatory, and that every means should be taken to prevent its spread. It formulated a system of sanitary measures which afforded a maximum of protection for public health with a minimum of restriction to travel and traffic; it fixed the period of detention and isolation; it defined the distinction between medical surveillance and observation; and finally it permitted a person arriving from an infected port to proceed to his destination, but it maintained a rigid observation of him during the period of incubation of the cholera germ. The resolutions of this Conference were followed by a convention which was signed, with but one or two exceptions, by all of the powers represented.

These last two Conferences proved conclusively that international agreements could be made designed to prevent an invasion of Europe by cholera, which, though placing severe restrictions upon commerce and travel, were not incompatible with the laws and customs of the contracting powers. But valuable as these agreements might prove to be, they were simply barriers erected around the immediate frontier of the state against a foe whose habitat was in the far distant delta of the Ganges. Modern science has proved conclusively that the germs of this plague have never left their native soil except when they were conveyed by human agency. Repeated epidemics had also demonstrated the fact that cholera never invaded the districts of Northern and Western Asia except when large bodies of people made pilgrimages to the holy places of the Orient. The chief and most important of these pilgrimages was that to Mecca by the pilgrims of India. It was equally demonstrated by repeated observations that cholera reached Europe only through its pilgrims who visited the holy places of Asia, and especially Mecca. It became, therefore, a well-established fact that the transmission of the cholera infection from India to Europe was, in its first stage, through the pilgrimages of the Mussulmans from India to Mecca, and other places of resort. At these places it was transferred to the European pilgrim, who conveyed it to Europe. It was evident that the international rules and laws enacted did not meet existing conditions. As a matter of fact, cholera appeared at Mecca eight times between 1871 and 1893. The European states, therefore, could not be certainly protected when the cholera infection was brought without hindrance to Mecca, and the European pilgrim was allowed to visit Mecca and return without any proper sanitary surveillance.

Such considerations as these induced the French Government, always alert in its efforts to provide adequate measures for the prevention of cholera epidemics, to issue a call for another Conference, the ninth in the series, and the fourth called by the Government of France. The object of this Conference was to provide measures for preventing, by international agreements, the transmission of cholera from its native habitat by pilgrims. The task was the greatest and most important ever undertaken by any state or combination of states.

This Ninth Conference met in Paris, on February 7, 1894, and was attended by representatives from sixteen states, viz., all the powers of Europe except Switzerland; and Persia, and the United States, Egypt, the British possessions in India, and the Straits Settlements of the Netherlands.

In his opening address the President of the Conference, M. Casimir Perier, now President of the French republic, eloquently portrayed the duties of the assembled delegations. "The modern scientific spirit," he remarked, "has proved both its firmness and its flexibility in the course of extended efforts to combat the Asiatic pestilence by means of international agreement. By more exact information of the disease and the phenomena attending its transmission, it has gained a knowledge of prophylactic measures both more certain and more prompt. It has demonstrated that the more simple methods are at the same time the more efficacious. It has conserved public interest at the same time that it has protected human lives. The connections which diplomacy has had the honor of concluding have been matured in the laboratories where men of science pursue their disinterested researches. It is the common labor and the common honor of science and diplomacy to acquire and exercise the knowledge necessary to reconcile the customs which govern international commerce and the laws on which depend the protection of human life. . . . You have to continue now the labors which were commenced at Venice. It is your duty to pursue cholera toward its source; toward that part of Central Asia where it is said to have its origin so far as it affects us. This part of your task is particularly delicate, and the method and the principles which have heretofore guided you should again govern your actions. They are now recognized as correct, and they have hence acquired a high authority. But in applying them you should not forget that sympathy for those who suffer, individual kindness, and international fellowship, generosity and equity, ought also to have their proper place in your deliberations. It is in these previous deliberations that you will have found the discretion necessary to unite to all of the guarantees that health and the public interests may require, respect for local customs, usages, and traditions, and especially that persuasive influence which shall secure to your decisions the concurrence of all upon whom they ought to be binding."

M. Barrère, the acting President, after explaining at some length the events which led to the present Conference, introduced Professor Proust, who read an elaborate paper, in which, after reviewing the work of preceding Conferences, showing how effectually they had protected the immediate approaches to Europe from an invasion of cholera, he proceeded to detail the questions which the present Conference was called to consider. They involved problems more difficult of solution than any ever presented to a deliberative body. The danger to Europe from an epidemic of cholera, primarily, depends upon the periodical migration of large bodies of the Mussulmans from India, the natural habitat of the cholera germ, to the holy places of Northwestern Asia, and especially to Mecca. Cholera has never visited Europe except when transported from the delta of the Ganges by pilgrims. These pilgrimages are made by vast hordes of people, the greater number of whom are poor and feeble, or actually sick, and all are accustomed to filthy habits. It appears that sixty per cent. of those who leave India on these pilgrimages never return to their homes. The problem of preventing epidemics of cholera in Europe could only be solved by subjecting these pilgrims to rigid sanitary regulations, and to effectually accomplish this object there must be international agreements.

The difficulties to be encountered in adopting and enforcing sanitary rules for pilgrims were numerous. 1. The pilgrims themselves would be intolerant of any restrictions upon their performance of a religious obligation. 2. Sanitary regulations adequate to prevent the transportation of cholera infection must in some degree interfere with the ordinary freedom of commerce. 3. These sanitary rules and regulations, in order to be effective, must be enforced under the supervision of a central authority and not by local authority.

It was very evident, therefore, that this Conference was confronted with difficulties which no other had to encounter. While it might prove an easy task for the technical delegates to formulate an ideal code of sanitary rules which, if rigidly enforced, would effectually prevent the transportation of cholera by the pilgrims, it

was apparent that the diplomatic delegates would have no slight difficulty in reconciling the various commercial and public interests involved.

It will forever redound to the credit of this Conference that it resolutely set to work on the programme laid before it, and not only created a body of admirable sanitary rules governing pilgrimages, but provided adequate means of enforcing them.

The programme presented by the French delegation was as follows: [1]

I. Prophylaxis of the Pilgrimage of Mecca.
II. Protection of the Persian Gulf ports.

The programme of discussion was formulated as follows:

I.—Prophylaxis of the Pilgrimage to Mecca.

(*A*) Sanitary police in Indian ports.
1. Medical inspection of pilgrims.
2. Disinfection.
3. Refusal of embarkation of infected or suspected persons.
4. Refusal of embarkation to all pilgrims who shall fail to show that they possess means to defray the expense of the pilgrimage; five days' observation of other pilgrims.
5. Sanitary passport.
6. Disinfecting apparatus on each vessel.
7. Adequate supply of potable water protected from infection.

(*B*) Sanitary surveillance of pilgrims at the entrance of the Red Sea.
1. Choice of site for quarantine station.
2. If Camaran be chosen, improvements to be instituted.
3. Disinfecting apparatus.
4. Formation of board of management to be under the control of the Sanitary Council of Constantinople.

(*C*) Improvements to be instituted at Abou-Saad and Vasta.
(*D*) Supervision of land caravans of pilgrims to Mecca.
(*E*) Reorganization of the sanitary station of El Tor.

II.—Protection of the Persian Gulf ports.

(*A*) Establishment of sanitary posts at Fao, Bender-Abbas, Koveit, Bender-Bouchir, Bassorah, Mohammerah.
(*B*) Sanitary surveillance at Menama, in the Bahrem group of islands.
(*C*) Sanitary supervision at Mascate and Guadar, in Beloochistan.
(*D*) Constitution of a sanitary authority to have charge of carrying out quarantine measures.

A wide divergence of views, in regard to the best method of treating an epidemic of cholera very early appeared among the technical delegates, and became very pronounced in the discussion of many questions throughout the entire session. These different opinions were as follows:

1. The French delegates held that cholera infection should not be allowed to be conveyed from place to place, either by travellers and their effects or by articles of commerce, hence they approved of enforcing such sanitary rules as would free the traveller and his baggage, as well as articles of commerce, of the contagion of cholera at any place in their transit where they were discovered or suspected to exist. This policy was sustained by every delegation except that representing Great Britain and its dependencies.

2d. The British delegation held that the proper method of dealing with cholera is to perfect the sanitary conditions of cities, villages, and the homes of the people, and allow the contagium of the pestilence free course along the routes of travel, whether by sea or land. All barriers to the entrance of cholera into any state were condemned, especially any form of quarantine which delayed the progress of vessels into ports and the immediate discharge of cargo. This public policy was supported only by the delegation from Great Britain.

3d. The delegate who represented the British possessions in India held that cholera is due to epidemic influences quite beyond human control; hence he advocated non inteference. This policy was supported only by the delegate who represented India.

The scope and character of the regulations adopted can be illustrated by a few selections. In general it may be stated that the pilgrim is placed under sanitary surveillance of a very rigorous character from the moment he announces his intention to go on a pilgrimage, till his return home. 1st, He must obtain a sanitary pass port from the local authority. This rule is taken from the Netherlands' Straits Possessions. Before the passport is issued, the intending pilgrim must prove that he has complied with all of the conditions necessary for his departure; and that he has money sufficient for the voyage, and to sustain his family in his absence. This passport the pilgrim must retain and show to the sanitary authorities, *en route*, and he can enter the Hedjaz, the province in which Mecca is located, only on presentation of it, and on passing an examination. He is under sanitary observation while at Mecca, and on his return a new passport is given him, which he must show to the authorities *en route*.

At the port of departure the pilgrim comes under the sanitary police, and the following regulations are to be enforced:

Medical inspection of all persons taking passage on board a pilgrim vessel made individually, by daylight, on land, and by a physician appointed by the local sanitary authority.

Thorough disinfection made on land under the direction of the physician appointed by the sanitary authority of all infected or suspected articles.

Refusal of embarkation to any person attacked with cholera or choleriform disorders.

When a case of cholera exists at the port, embarkation on board of pilgrim vessels shall not take place until the persons to be embarked have been segregated and subjected to observation for five days.

Each pilgrim vessel must have the following provisions:

Every vessel embarking one hundred or more pilgrims shall carry a physician commissioned by the government to which the vessel belongs. If the number of passengers exceeds one thousand a second physician shall be engaged.

The physician should see that the rules of hygiene are observed on board, and that food and water are distributed according to agreement.

Pilgrims shall be lodged between decks.

The deck should remain clear. It should be placed at the disposal of the passengers.

Passengers shall be allowed to retain only such baggage as is strictly necessary.

The vessel shall be provided with latrines in the proportion of one to each one hundred passengers. These shall not be located in the hold or between decks. They shall be cleaned three times daily and flushed with sea water.

Each person shall be gratuitously furnished with five litres of drinking-water a day.

If there shall arise any doubt as to the condition of the drinking-water it should be boiled and sterilized, and the captain is directed to empty it overboard and replenish at the first stopping-place.

Two kitchens shall be provided for the use of the pilgrims. They shall not be allowed to cook elsewhere.

Medical care and attendance shall be furnished gratuitously to the pilgrims.

A regularly organized infirmary shall be provided for the sick. It shall be large enough to accommodate five per cent. of the passengers, with a space of three square metres per capita.

The vessel shall be provided with the means of isolation in case of choleraic attack.

Each pilgrim vessel is subjected to the following regulations at the port of departure:

The captain of a pilgrim vessel is required to declare to the port authority, at least three days in advance, his intention of embarking pilgrims. He must also declare the date of intended departure and the port of destination.

The sanitary authority of the port shall then inspect and measure the vessel. The consul representing the flag carried by the ship may assist, if he so desires, at this inspection.

The port authority shall not permit the departure of a vessel until he is assured:

(*a*) That the vessel is clean, and, if possible, disinfected.

(*b*) That it is in condition to undertake the voyage, and that the sanitary conditions are good.

(*c*) That the food and fuel provided for crew and passengers are sufficient in quantity and good in quality.

(*d*) That the water is good and obtained from a pure source; that it is sufficient in quantity, protected from contamination on board, and dispensed by faucets.

(*e*, *f*, *g*, *h*) That the vessel carries distilling apparatus capable of producing five litres of water a day per capita for all persons on board, passengers and crew; that it carries a disinfecting stove and has on board a physician and a ship's medicine-chest, and that the deck is clear.

The captain shall post notices drawn up in the principal languages spoken by the pilgrims stating:

[1] See Abstract of Sanitary Reports issued by the U. S. Marine Hospital Service for Summary of Conference proceedings.

1. Destination of the ship.
2. Daily ration of food and water.
3. The price of provisions not included in the daily distribution.

The captain shall not be free to leave port until he holds:

1. A list of the pilgrims whom he is authorized to embark, viséd by the port sanitary authority.

2. A bill of health stating the name, nationality, and tonnage of the vessel, name of the captain and physician, the number of persons embarked, crew, passengers, and pilgrims, nature of the cargo, place of departure and destination, and condition of public health in the port of departure.

During the voyage the following requirements are enforced:

All articles that have come in contact with the sick shall be promptly disinfected. Articles of no value should be thown overboard if the vessel is at sea, or else burned if the vessel is at port.

In case of a death occurring on board during the voyage the captain shall note the fact with all particulars.

The bill received at the port of departure shall not be altered in any way during the voyage. It shall be viséd in every port at which the vessel stops by the sanitary authority who shall note thereon:

The number of passengers landed or embarked.

Any facts touching the condition of the passengers and any incidents of the voyage.

The sanitary condition of the port at which the vessel is stopping.

The captain shall see that all prophylactic measures taken on board during the voyage are inscribed in the log.

The captain shall pay all sanitary taxes.

Arriving at the Red Sea, and before proceeding to Hedjaz, the pilgrim ship must touch at the sanitary station at Camaran and there be subject to the following treatment:

Vessels declared upon medical inspection to be clean shall be allowed free pratique after compliance with the following regulations: The pilgrims shall be disembarked; they shall take a spray bath or a bath in the sea; their soiled linen and such of their baggage and effects as may be suspected of infection shall be disinfected. The duration of this process, including landing and re-embarkation, shall not exceed forty-eight hours. If during this period no case of cholera, diarrhœa, or choleriform disorder shall develop, the pilgrims shall be at once re-embarked and the vessel shall proceed to the Hedjaz.

Suspected vessels—that is to say, vessels on board of which cholera declared itself at the moment of departure, but on which no new case has occurred within seven days—shall be treated as follows: The pilgrims shall be disembarked; they shall take a spray bath, or else a bath in the sea; their soiled linen and such of their baggage and effects as may be suspected of infection shall be disinfected, at the discretion of the medical officer. The duration of this process, including landing and re-embarkation, shall not exceed forty-eight hours. If no case of cholera or choleriform disorder shall develop during this period, the pilgrims shall be at once re embarked, and the vessel shall proceed to Djeddah where a second medical inspection shall be made on board. If the result is favorable, on the written and certified declaration under oath that no case of cholera has occurred during the voyage from Camaran, the pilgrims shall be disembarked. If, on the contrary, cholera or choleriform disorder shall have declared itself during the voyage, or at the moment of arrival, the vessel shall be remanded to Camaran, and there undergo a second time the treatment for infected vessels.

Infected vessels—that is to say, vessels on board of which cholera and choleriform disorder shall have declared itself within seven days—shall be treated as follows: The persons attacked with cholera or choleriform affections shall be disembarked and isolated in hospital. Thorough disinfection shall be performed. The other passengers shall be disembarked and isolated in groups, consisting each of as few persons as possible, in order that only a small front shall be exposed to choleraic attack, should the disease develop. The soiled linen, utensils, and clothing of crew and passengers shall be disinfected; also the vessel itself.

The sanitary authorities shall decide whether the unloading of the larger baggage and the cargo is necessary, and whether the entire vessel or only a portion of it shall be disinfected.

The passengers shall remain five days at Camaran. If the cases of cholera date back for several days, the period of isolation may be curtailed. It shall vary according to the date of the last outbreak and in the discretion of the sanitary authority.

From Camaran the vessel shall proceed to Djeddah, where thorough medical inspection shall be made on board. If the result is favorable the pilgrims shall be disembarked. If, on the contrary, cholera or choleriform disorder shall have developed on board, either at the moment of arrival or during the voyage from Camaran, the vessel shall be remanded to Camaran, and shall there undergo for a second time the treatment for infected vessels.

Such is but a summary of the rules made by the Conference governing the pilgrimages from India by way of the Red Sea. Similar rules were made to apply to pilgrims going by way of the Persian Gulf, or approaching Hedjaz from the north. These rules were to be equally enforced on the return of the pilgrims to their homes by any route. While at Mecca the pilgrims were under rigorous sanitary surveillance.

An examination of these rules will make it apparent that if they are rigidly enforced cholera cannot reach Europe again through the medium of Mussulman pilgrimages. And herein we have the possible failure of the work of the Conference. Sanitary rules are worthless if not faithfully executed, and yet no class of laws is so difficult of enforcement as those designed to protect the public health.

In their practical application, to be effective in the prevention or control of contagious and infectious diseases, individual rights, religious observances, commercial interests, and even national customs, must be subordinated to the exigencies which these pestilences create.

It has been held that health laws are anomalies in civilized government. They arbitrarily set aside ordinary laws because they are adapted to an anomalous condition of the people. When it is considered that the health laws created by the Conference were to be applied to people intolerant of any restriction upon individual liberty, and especially upon the customary performance of ancient religious obligations, it will be apparent that when the technical delegates had perfected their work of completing the rules and regulations, a serious responsibility was imposed upon the diplomatic delegates in providing the ways and means for their execution.

There was a strong disposition manifested by those states within whose jurisdiction these rules were to be chiefly executed, to be alone responsible for their enforcement. But the other states very properly opposed such action, alleging that local interests might interfere with that rigid execution of every necessary detail so essential to success. A failure of one state through which the pilgrims might pass, to rigorously apply the rules, would imperil the entire scheme. It was determined, therefore, after much discussion, that all of the contracting powers should have a part in the enforcement of these international agreements. The following method of accomplishing this object was finally agreed upon:

1. The application of the measures adopted by the Conference in regard to the pilgrimages shall be intrusted to a committee chosen from among the members of the Council of Health of Constantinople. This committee shall be composed of three representatives of Turkey and of the several powers who accepted the sanitary agreement signed by the Conferences of Venice and Dresden. The president of the committee shall be an Ottoman.

2. To secure effective service at the several sanitary stations, competent corps of physicians, disinfectors, mechanics, and sanitary guards, recruited from among ex-officers, commissioned and non-commissioned, shall be created.

3. The expense of carrying out the system proposed by the Conference shall be divided between the Ottoman Government and the Council of Constantinople, according to the scale already fixed by the several powers interested.

4. The sanitary authority at the Ottoman port of arrival or departure shall draw up a statement of any infraction of this agreement, to which the captain of the offending vessel shall attach any explanation he may have to make. A certified copy of this statement shall be transmitted to the consul representing the country to which the vessel belongs. The consul shall require the fine to be placed in his hands. In the absence of the consul the fine shall be deposited with the sanitary authority. The fine shall ultimately go to the Council of Constantinople, when the consular commission shall have declared it valid. A second certified copy of the statement shall be forwarded to the Council of Constantinople, who shall refer it to the consular commission.

5. A consular commission shall be formed at Constantinople to have cognizance of disputed cases, and to act as judge between the

sanitary agent and the ships' captains. It shall be elected every year.

6. The taxes and sanitary fines shall not be diverted to any objects but those relating to the sanitary councils.

In addition to these regulations the Conference provided for the equipment of suitable stations on the route of the pilgrims, with all the apparatus necessary to make each a sanitarium, where the traveller will receive the most perfect sanitary care and treatment. The Ottoman Government had already created several stations, and the Conference took measures to perfect them and add others. Thus the island of Camaran, near the entrance to the Red Sea, it recommended should be entirely devoted to a sanitarium for the pilgrims coming from the south. For this purpose all the present inhabitants are to be removed, the harbor is to be rendered secure to shipping, and every facility supplied for the comfort of passengers, and the thorough cleansing and disinfection of themselves, their effects, and the pilgrim ships. In the same manner, Djebel-Tor, at the northern extremity of the Red Sea, is to be provided as a sanitarium for the pilgrims from the north. The ports of the Hedjaz, where the pilgrims debark for Mecca, are to be equally well equipped as sanitary stations. A large number of similar sanitary stations will be created along the Persian Gulf route, and also along the overland caravan routes. Finally, Mecca is to have its sanitary conditions perfected, and a complete surveillance of the pilgrims organized.

For nearly two months the Conference devoted itself assiduously to its duties. It was aided and encouraged in its work by the highest officials of the French Government. President Carnot frequently met the delegates; M. Casimir Perier, the Premier, accepted its presidency. M. Barrère, now Ambassador to Switzerland; M. Hanotaux, now Minister of Foreign Affairs; Professor Brouardel, Dean of the Faculty of Medicine of Paris; Professor Proust, Inspector-General of the Sanitary Service; and M. Monod, Councillor of State, comprised the French delegation. To the courtesy, constant efforts, and judicious management of this delegation is due in large measure the harmony which characterized the deliberations of the Conference and the happy consummation of its labors.

The code of sanitary rules governing the migration of large bodies of people from or through districts infected with cholera which the Conference finally completed and adopted, is based on the most advanced principles of sanitary science. When this code is finally accepted by the powers of Europe and Asia, and by the United States, and then becomes in effect international law, it will mark the commencement of an era which will be characterized by the extermination of those roving pestilences which have heretofore been the scourge of the human race.

One feature of the Conference remains to be noticed, which is of special interest to the people of the United States. As this Conference was called to devise international measures to prevent the transportation of cholera by the migration of large bodies of people, it seemed to the delegates from the United States, or at least to a majority of them, that it would be a fitting occasion to consider also the closely allied subject of the conveyance of cholera from Europe to the United States by emigrants. It was apparent that the sanitary rules and regulations relating to travel and traffic which would prevent the transmission of the cholera infection from India to Europe by the pilgrim, would, if properly applied, prevent the transmission of cholera from Europe to America by the emigrant. The instructions which the delegates received from their Government led them to believe that the President also entertained the opinion that the question of the transportation of cholera by emigrants would be a legitimate subject of discussion in the Conference.

Actuated by these considerations the delegation brought the matter before the Conference at its third session in a formal paper. It was shown in this statement that cholera has as yet never reached the United States from Europe except through the emigrant classes. The imminent danger of an invasion of the United States by cholera, when it is prevalent in Europe, will appear when we consider:

1st. The vast numbers of immigrants who land on our shores annually. In 1893, 357,857 emigrants from Europe arrived at the single port of New York. In some years the number has been quite half a million.

2d. These immigrants are, for the most part, the poorest, filthiest, and most insanitary class of the population of the states of Europe. They are not only extremely filthy in their persons and habits, but they bring large quantities of filthy baggage and household goods, which are admirably adapted to preserve the germs of contagious and infectious diseases in all their potency.

3d. The rapidity with which the transit of the ocean is now made by the great passenger vessels—and it is on this class of steamers that the bulk of the immigrants reach the port of New York—renders it possible now for an emigrant to receive the cholera into his system in Europe and be safely domiciled in New York City before the period of incubation has fairly expired.

To meet these exigencies the United States has but one remedy, and that is a rigorous quarantine. Such sanitation of cities, villages, and the homes of the people as might make it safe to allow the cholera contagium free access to our ports is impossible. The opinion was expressed that if, by an international agreement, such sanitary regulations could be enforced as would secure to the emigrant from Europe to America cleanliness of person and baggage, adequate means for his care during the voyage, and a reasonable guarantee that he is not the carrier of the cholera germ, would be followed by greatly diminished restrictions, which our Government must otherwise impose upon travel and commerce in our ports.

The communication of the delegates concluded by requesting that the programme of the Conference be so enlarged as to include the preparation of international sanitary rules governing the migration of the laboring classes of Europe to America.

At a subsequent session the United States delegates submitted more in detail, at the request of the Conference, the questions for consideration. The several propositions were nearly those already under discussion in regard to the pilgrims, viz.

1. Measures to be adopted to enable the emigrants to come to the port of departure free from contagious diseases. Each emigrant should obtain from the local authority a passport or certificate showing the sanitary condition of the place from which he came, the route that he has followed to the port of departure, and, as far as possible, the state of his health during his journey. The passport for the pilgrim made nearly the same provision.

2. Measures to be taken at the port of departure to prevent the germs of cholera being taken on board of vessels, either by the emigrants personally, or by their clothing or other effects. These measures would correspond with those adopted by the Conference with reference to pilgrims at the port of departure, viz., detention for several days in reception quarters where bathing and disinfection could be thoroughly performed and any infection present destroyed.

3. Measures to be taken to secure the best sanitary condition of vessels carrying emigrants, before their embarkation, in order that the health of the emigrants may be preserved during the voyage. The excellent sanitary regulations which the Conference adopted for pilgrim ships would apply with some modifications to emigrant ships.

4. Measures to be taken during the voyage both to preserve the best sanitary condition of the ship, and of the emigrants and equipage, and to promptly suppress any focus of infection which might develop on board.

These provisions were amply made by the Conference with regard to pilgrim ships during the voyage.

5. Measures to be taken at the port of arrival, which would comprise such changes in the regulations of our quarantines as would adapt them to the new conditions which these international regulations would secure as to the liability of emigrants to be the carriers of cholera infection.

The communication of the American delegates was received with marked attention by the members of the Conference. It was conceded that there was such a close analogy between the methods of conveyance of cholera infection from India to Europe by the pilgrims, and from Europe to America by the emigrants, that the international sanitary regulations governing the migration of one class would be nearly applicable to the other. The delegates of several states cordially adopted the views of the American delegates, and were disposed at once to consult their respective governments to obtain the power to enlarge the programme in accordance with our request. Others, while acknowledging the great importance of the subject, were of the opinion that, as the present Conference was called for a specific purpose, it should not add to its duties another obligation, however closely it might be allied to the one in hand. They proposed that the emigrant question be deferred to another Conference called for that special purpose. The British delegation opposed enlarging the subjects for discussion at the present Conference, and also to the calling of another Conference to consider the emigrant question, basing their objections upon their often-reiterated opinions that the prevention of the spread of cholera should not be attempted by restrictions upon travel and commerce, but that every state should secure to its people homes so healthy that they would defy the potency of the cholera germ. It should be stated that at one of the sessions of the present Conference, on the occasion of the statement of the above opinion by the distinguished medical officer of the Local Government Board of England, the technical or medical delegate of Greece, replied that his Government had no such power as would secure that degree of sanitation of the homes of the people of which the English boast, and it must, therefore, rely upon a rigorous quarantine against cholera. As to the value of home sanitation compared with a rigorous quarantine in the protection of the people against cholera, he reminded the British delegation that during the last year there were several outbreaks of cholera in England, with a number of deaths, while for forty years there had not been an outbreak of cholera in Greece, though the pestilence had many times prevailed in surrounding countries.

After considerable discussion the Conference decided not to change its programme, but with much unanimity concurred in the opinion that another Conference should be called, if requested by the Government of the United States, to formulate international sanitary regulations governing the migration of European populations to America.

Meantime the delegates from several of the powers received instructions to unite in the call of such Conference, and two delegations presented the formal requests of their governments to be permitted to entertain the Conference at their respective capitals. The United States delegation reported the action of the Conference to their Government, and asked for instructions. The President replied that it was too late in the season to call another Conference. Thereupon further efforts to arrange for a Conference were discontinued, but the final sentiments expressed to us by many members were to the effect that, whenever the United States Government signified to the European powers its desire to enter a Conference with them for the purpose of establishing an international agreement relating to the sanitary supervision of emigrants from Europe to America, all of the states invited would respond.

To one who has practically studied the problem of the prevention and suppression of such world-wide epidemics as Asiatic cholera, the importance to the people of the United States of the co operation of the governments of Europe with our Government, in freeing the emigrant from the germs of contagious and infectious diseases before he embarks for our ports, cannot be overestimated. The proposed scheme of sanitary surveillance of the emigrant would begin at his domicile abroad, and follow him every step of the way to his home in this country. His passport issued by the local European health officer, and viséd at every point in his progress, would not only contain a record of his condition as regards his freedom from infection and his health, but it would be his only guarantee that he could travel at all on railways to the port of departure or that he could embark on any steamship bound to a port in the United States It is at once apparent that such an international agreement would bring to our shores only healthy emigrants and in healthy ships. Two consequences would inevitably follow, viz., first cholera would never be brought to this country by the European emigrant; and second, our quarantine would consist only in a detention for the examination of the passports of emigrants and the inquiries and inspections necessary to determine that shipmasters had faithfully complied with the international sanitary regulations.

Thus closed the Ninth International Sanitary Conference, in many respects the most important of the series. It was in fact a congress of nations summoned to create a code of international laws entirely in the interests of human health, and consequently of human happiness. Its sessions were characterized throughout by that earnestness in the discussion of theoretical questions and that conciliation in harmonizing practical methods which distinguishes the modern scientific spirit. We cannot doubt that when the laws which it enacted are faithfully executed, not only will Europe and Northern Asia be relieved from periodical visitations of the most destructive plague of modern times, but that the vast hordes of roving pilgrims which traverse Asia, scattering a pestilence which decimates the people among whom they pass, while it strews their own pathway with their dead, will be transformed to an orderly body of travellers, characterized by that physical and mental health and cleanliness of person and baggage so essential to the rational discharge of religious obligations.

But have not the nations which in this Conference accomplished so great a work in the relief of the Mussulman pilgrim, and the protection of Europe from cholera, a similar duty to perform toward the Western emigrant, who, taking up the germs of the plague brought to Europe, conveys them in his filthy person and effects to America? M. Casimir Perier complimented the delegates to the Ninth International Sanitary Conference on the success which science has had in breaking down those ancient barriers which the varied interests of mankind have created, and urged them to persevere in the good work until all such restrictions are removed. Must there not be a Tenth Conference, which shall unite the efforts of the European powers and the United States in removing the barriers with which commerce and custom protect the emigrant from the application of those sanitary measures which would strip him of every form of contagion, and bring him to our shores in good physical and mental health?

The Prussian Government expends over $50,000 a year in support of the laboratories connected with the medical department of the University of Berlin. This is exclusive of the salaries paid to professors

Asphyxia and Tongue Traction.—Dr. Bories reports, in the *Tribune Médicale*, the case of a child who apparently died during the performance of a tracheotomy for croup. Artificial respiration was of no avail, but life was restored in five minutes by rhythmical tractions of the tongue.

THE PLACE OF PHYSICAL TRAINING IN THE MILITARY SERVICE.

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It is an admitted fact that the mortality from disease attains a considerably higher percentage in war than that from wounds. It would seem, then, that the prevention of disease is the most important function of the medical officer in active campaign. In peace, where the mortality of the battle-field is entirely eliminated from consideration, prophylaxis plays a still more important *rôle*. Recognition of the value of careful attention to the suggestions of the medical officer as an important factor in securing the greatest efficiency of a command has been a matter of slow growth, but it has been progressive. The influence upon a command of the sanitary condition of camps, cuisine, and clothing, has come to be fully recognized through the active labors of army medical officers, until the surgeon is no longer considered a useless encumbrance except when sickness is present, but takes his place as the most important member of the staff.

It is singular that, while the medical department has devoted ample attention to the prevention of disease by the removal of threatening conditions, it has almost entirely neglected prophylaxis by increasing the resisting power of the soldier himself. It is true that the line has been equally unmindful of so potential an agent in securing efficiency in the soldier, devoting centuries to the development of the weapons of war, entirely regardless of the development of the men who were to handle them. Latterly, however, a new interest has arisen in the subject, and at some military posts useful work has been done with insufficient appliances. The sentiment of those officers who have given physical training a fair trial is unanimous in favor of its vast utility. Medical officers, however, have given it but little attention, although they alone are qualified to fully understand its value or to supervise its conduct.

The culture of the body, to be correctly accomplished, demands not only sufficient anatomical and physiological knowledge to locate defective parts, but sufficient pathological perceptivity to appreciate the advantages or dangers to be incurred by training these parts That it is impossible for any but a medical man to comprehend the needs of the body in the matter of training, has been recognized by the better class of instructors in physical culture, from Ling, the founder of the Swedish system, down to the great teachers of the present day, who have almost invariably qualified as physicians, as an essential preliminary to the proper comprehension and application of physical culture.

While physical training may with propriety be called muscle-building, it should be understood that the culture of every other constituent of the organism progresses *pari passu* with that of the muscles, to which the chief attention is given. It requires the most accurate notions of the muscular structure to select the individual muscle to which a part owes its weakness or lack of symmetry. The anatomical and physiological knowledge necessary to individualize and educate distinct muscles in such a manner as to produce symmetry and correctness of contour, and the maximum of strength combined with the greatest facility in its employment, demands special medical training. Anyone can run a tape measure about an arm, but it requires not only the information acquired in the dissecting-room and the physiological laboratory, but the power of discrimination developed by careful and intelligent clinical observation, in order to discover what particular member of a group of muscles is responsible for the lack of power which it is desired to correct. Not only does it require the most correct appreciation of muscular function to understand the particular movement or combination of movements adapted to the development of a defective muscle, but, in order to secure the best results, there must be a familiarity with the secondary and remote effects upon the other portions of the system.

The perfect man is a figment of the imagination. No person is known to have existed who was an embodiment of perfect health. A physical examination of the most vigorous would reveal in each some lesion of actual disease, some predisposing weakness, or both. The object of physical training is to take cognizance of physical deficiencies and correct them by movements adapted to secure growth. Hard labor is far from being an equivalent of physical training. It is true that laboring men acquire great strength in certain groups of muscles, but this gain is overbalanced by losses in others. The ploughman has strength in his arms, back, and legs, but he loses in his respiratory muscles and the anterior thoracic muscles. The deformities of occupation, due to the excessive use of one portion of the body, to the neglect of others, have a recognized place in orthopedics.

The material obtained by taking the average man is excellently shown in Prince Hohenlohe's description of the men obtained in the recruitment of his own regiment. "The barracks were soon full of figures that would put to shame the most exaggerated cartoons of the comic papers. The awkward fellows, whose neglected carriage made them look like a set of botched-up images, tried hard, but in vain, to stand erect. Ill made and undeveloped, their uniforms would not fit them, and, if altered to fit their present figure, would need to be remade when they should have been remodelled by physical training. So, before teaching them a single movement of the military drill, or providing them with uniforms other than their canvas fatigue suits, they were drilled in gymnastic exercises leading progressively and gently from the easy to the more advanced, until finally they had a reasonable command of themselves."

This picture reminds one somewhat of the appearance of the "candidates" at West Point. These young men have quite generally been subjected, before coming to the Academy, to a physical examination by a competent medical man and by him pronounced physically sound. But they are almost to a man awkward, unsymmetrical, and unevenly developed, making an appearance, as they are marched to the mess hall, fully as absurd as the conscripts of Prince Hohenlohe. And they form a particularly instructive contrast with the "yearlings" who have enjoyed the advantages of a year's drill in physical training.

Methods of recruiting employed by the regular army in times of peace to a large extent prevent the admission into the military service of men with muscles clearly undeveloped or atrophied by distinctly marked disease. Still it is not infrequent in my observation that men are enlisted, particularly by the regimental recruiting service, with defects or deficiencies sufficiently pronounced to contribute to their life for the next two or three years an important bearing upon their future health. While actual deformity or disease is a bar to the admission of the recruit, the variation in structure is so great that but a small proportion of recruits is either symmetrical or developed.

In the National Guard, where, for evident reasons, the physical requirements need not be as severe as in the regular service, the field for physical training is still broader and the results obtainable still more striking. Voluntary service lends to the work of the guardsman an enthusiasm which is an important factor in the attainment of the best results.

Physical training may by divided into two categories:

1. Preparatory training, by which deficiencies are corrected and a proper equilibrium of the system secured.

2. Conservative training, by which a well balanced state of the system is maintained after having once been obtained.

The preparatory training, particularly, demands medical supervision. Here the methods of physical diagnosis come into play. Mensuration, inspection, and palpation are of particular importance. In many gymnasiums mensuration is the only diagnostic method employed, but it is evident that it is necessarily insufficient, since

one group of muscles may be so over-developed as to neutralize, in the measurement of a limb, the effect of the atrophy of another—the girth of a part may be up to the average, and yet a very definite defect may be readily detected by experienced inspection, and its character appreciated by careful palpation.

As a general rule, weight, height, and breadth may be said to be in direct proportion to the strength. But the exceptions to this rule are numerous and pronounced. Weight may be due to an excess of adipose tissue, tending to produce debility rather than strength. Height may be due to excessive length of legs or neck, both elements of weakness. Breadth may exist with flaccid muscles and fatty deposits, which are incompatible with great physical power. As already suggested, there is usually a lack of harmony in development between the various parts of the body, and in this disproportion may lie the source of marked physical deficiency. The well developed chest and arms are more than likely to be accompanied by spindling legs. The limbs of the left side are, in a large proportion of cases, smaller than those of the right—an asymmetry which extends to numerous other details.

The preliminary facts upon which to base the preparatory training are of ten varieties: 1, The weight; 2, the height from the floor of the knees, the pubic arch, the sternum, and the vertex of the head, the latter with the body standing and sitting; 3, the girth of the head, neck, chest, waist, hips, thighs, knees, calves, insteps, arms, forearms, and wrists; 4, the depth of the chest and abdomen; 5, the breadth of the head, neck, shoulders, waist, and hips; 6, the length of each side from shoulder to elbow, elbow to tip of middle finger, of the feet and of the body laid horizontally; 7, the stretch of the arms; 8, the capacity of the lungs; 9, the strength of the lungs, back, chest, arms, and forearms; and 10, the development of the body. The appliances necessary for obtaining these data are a steel tape-measure, a large pair of callipers, several spring dynamometers, a spirometer, a manometer, a pair of suspended rings, and a set of parallel bars.

We are fortunate in having at our disposal at the present day the data based upon a large number of observations already made, by the consolidation of which types of manhood have been obtained. Sargent's observations are perhaps the best known and the most extensive, but in the records of the scientific gymnasiums of the country a vast amount of information can be obtained, particularly pertaining to the dimensions of youth and early adult age.

These data are exactly what is required by the surgeon in the examination preliminary to the preparatory training, for recruits are—invariably in time of peace—young men. Accurate examination of the recruit, using the eye, the hand, and the accessory instruments already enumerated, will show his deviation from the normal type, from which the exercises necessary to assimilate him to the normal will be a natural deduction. Muscular development depends on frequency of muscular action. The man with undeveloped calves would be given foot and ankle exercises, and he with a slender forearm would engage in the wrist and finger movements. The flattened chest would be brought out not only by use of the accessory respiratory muscles, but all exercises would, by causing deep and frequent breathing, cultivate the respiratory apparatus. The muscles of the neck and face can each be brought up by individual and combined movements. In connection with the special exercises prescribed for the compensation of deficiencies, the recruit will naturally engage with his comrades in other movements which will at the same time keep up the general physical tone, until he shall have attained a sufficiently uniform development to permit his passing into the class of the soldier and engaging only in conservative training.

The time during which the recruit remains in the preparatory class is very variable, being dependent upon two factors: 1, The amount of deviation from the normal type, and 2, the readiness with which he responds to treatment. During this period he should be continually under medical supervision, but when he passes into the second class, the personal medical inspection need be far less minute, although it should never be entirely withdrawn as long as the training is continued.

The soldier now enters upon the conservative training, extending to the general field of gymnastics where the exercises are numerous and varied. Every movement of the manual of arms and every evolution in marching have an effect upon the muscular system. But it is an error to presume that these are sufficient for thoroughly maintaining bodily efficiency. Not only are they by themselves insufficient for the maintenance of symmetrical development, but they even tend to the accentuation of asymmetry. The very existence of the "setting up" drill is an evidence of this fact. But while the expanded "setting up" drill, as now practised, serves excellently to correct the vicious attitudes imposed by certain phases of military duty, it is not competent, unaided, to maintain a high physical tone. Even were the prescribed military drills efficient in maintaining a symmetrical physique, they would soon, by constant repetition, become merely mechanical in their execution, a fact which would detract vastly from their usefulness. Physical training, in order to retain the interests of its participants, should be the subject of unlimited variation. There are no movements like those of the manual of arms requiring incessant repetition to secure precision in execution. Infinite diversity, then, may be obtained by the employment of the almost boundless category of muscular action—running, leaping, climbing, swinging, turning, lifting, striking, and the like, in various attitudes and with various surroundings, without apparatus and with the great variety of apparatus contributed by modern inventive genius. Athletic sports are also a powerful factor in stimulating interest in physical training, and for that reason should be heartily encouraged. The spirit of competition thus introduced into the work is of very considerable advantage, although a tendency, apparent at the present time, to subordinate physical training entirely to a preparation for participation in sporting contests, is to be deprecated.

An objection urged against physical training in the army is that the men do not take interest in it. This would hardly be supposed to be a valid objection to any plan looking to the improvement of the service. And moreover, it is not a valid objection. If there is absence of interest anywhere it is due to some defect in the management of the training. To put up a horizontal bar and a dozen dumb bells, and magnificently remark to a garrison: "There is your gymnasium, use it," is discouraging enough to ruin any project. The untrained man does not know how to use gymnastic apparatus. He may have seen the "Queen of the Air" swinging in a trapeze, but he quickly finds that circus acts are not physical training, and he naturally loses interest in the subject. He would lose interest in just the same way in the choicest book of Arabic that might be put before him. He must be taught how to utilize his opportunities. It is like any game, it must be understood to be enjoyed. And here is where the work of the medical officer comes into play and the instructors in physical training find their functions.

But he will require no instruction to appreciate the benefit of the training. The muscular growth begins at once; the size of the body increases; the circumference of the limbs is greater; the chest is enlarged, and the weight is augmented. The influence upon the system of the enlargement of the chest alone cannot be computed; the greater expansion permitted to the lungs, the greater play allowed to the heart, the greater amount of oxygen introduced into the system, the greater excretion of effete matter from the blood, with their secondary effect upon every cell and organism in the body cannot be expressed. The increased girth of the extremities is not

the only indication of their added strength, for it does not take into account the firmness and contractile power gained even before the growth began. The quickened sympathy between the brain and the muscles cannot be shown by any test. The suppleness, the agility, the self-confidence that have developed, cannot be represented by figures. The added keenness of perception, the comfort and satisfaction contributed to existence itself cannot be estimated, much less represented.

Physical training, then, should occupy a twofold place in the military service:

1. In its preparatory phase, it should be at the basis of all service (a) to build up to symmetry men whose physique is below the standard; (b) to improve the muscular harmony of all recruits, none of whom are symmetrical at enlistment; (c) to give to the men that ready command over the muscular system that only comes from thorough training; and (d) to contribute that quickness of mental comprehension only to be derived from exercising in response to frequently varied commands.

2. In its conservative phase, it should still remain at the foundation of all service. It is not enough to bring a soldier up to the maximum of physical serviceability, but he must be kept there. To overcome the retrograde tendency characteristic of all forms of life when stimulated to a higher grade, and no less present in physical development, a certain degree of training must be maintained constantly.

3. In both phases it should receive (a) the active personal support of the medical officer, for by strengthening the weaker portions of the system it will increase the resistance to disease and vastly diminish the sick-rate of his command; and (b) his most careful supervision as well, in order to insure the proper direction of the training and prevent excess in its application, an error in either case being sufficient to preclude a healthful growth.

The results of the scientific application of physical training to the military service will be wide-reaching in their beneficial effect.

1. The serviceability of the recruit will be more quickly obtained, not only by insuring the symmetrical growth of his frame, but by the awakening of his muscular activity and the consequent quickening of his mental faculties.

2. The efficiency of the entire army will be increased by the development of the physique of the units composing it.

3. The morality of the army will be elevated by substituting the healthful sports connected with physical culture for the less reputable amusements in which soldiers are sometimes tempted to indulge.

4. The economical administration of the government will be materially assisted, for training the soldier to physical vigor will result in keeping from the pension rolls the names of many who would otherwise promptly degenerate into helpless dependents upon the bounty of the State.

5. Not only will it vastly increase the efficiency of the military service, but it will have an extensive influence upon the entire community. As the years roll by, it will present to the commonwealth, upon their discharge from the army, a class of men, by their physical development and mental capacity, qualified to be more than ordinarily useful citizens. By its extension to the military schools, springing up all over the country, it will encourage healthful tendencies and manly inclinations in our youth. Through its adoption by the National Guard —always quick to adopt the best features of the regular service—it will disseminate physical development and intellectual activity throughout the young men of the nation. In every class of society, in every grade of life, wherever health is understood and length of life desired, its influence may be felt and its effects may be appreciated.

Edinburgh is Advancing, for there are now eight women practising medicine in that city and Leith.

ETHMOIDAL DISEASE.

By F. H. BOSWORTH, M.D.,

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Ethmoidal disease, both from the anatomical character of the region involved, and with reference to the symptoms to which it gives rise, differs essentially from diseased conditions found in any of the other accessory cavities of the nose. For whereas the maxillary, frontal, and sphenoidal sinuses present to us a single cavity confined by bony walls, the ethmoidal cells consist of a large quadrangular mass of small cells, or trabeculæ, varying in size, and each cell more or less completely separated from its neighbor by a thin, bony partition. This is fairly well shown in Fig. 1, the turbinated bone having

Fig. 1.—The Trabecular Character of the Ethmoid Cells, shown after the Removal of the Middle Turbinated Bone. From a Specimen in the writer's collection.

been removed. Hence while the problem which presents itself to us in dealing with morbid conditions in the other cavities consists simply in making an opening for proper drainage and irrigation, in dealing with diseased processes in the ethmoidal cells the radical arrest or cure of the disease, especially where suppuration has taken place, demands the opening of each of the large number of small cells which compose this mass. This is impossible. Hence we are compelled to resort to the breaking down of these small partitions within the ethmoid body in such a way as to convert it into one single cavity. And here, perhaps, it may be proper to say, that in a diseased condition of any of the accessory cavities I think we will all recognize the fact that the tendency in every case of a simple inflammatory process which does not undergo resolution, and which develops into a chronic inflammation, is to result in suppurative action, and thus the establishment of a more or less permanent pus discharge through the normal opening, namely, into the nasal cavity. The other respect in which disease of the ethmoidal cells differs from that of the larger sinuses is in that whereas in the latter we have simply a purulent discharge, in the former diseased action sets up a train of symptoms more or less neurotic in character, such as watery discharge from the nose, violent sneezing attacks, asthma, headache, neuralgias, which according to Berger and Tyeman[1] are usually intermittent in character; certain disturbances in the muscular control of the eyeball, asthenopia, and especially what has been called aprosexia. This latter really constitutes one of the most distressing symptoms of the disease, and has been described to me by patients as a sort of blanket over their brain which interfered with mental activity and the free use of their faculties. It is what the Germans call *Retentions-Erschöpfung*, and is defined in Billings's Dictionary as "inability to fix the mind upon a subject or to retain a lesson, accompanied by headache, and due to over-study or prolonged irritation in throat or nasal passages."

The topic which I am asked to discuss to day, as I understand it, is the surgical treatment of ethmoidal disease. Practically I suppose when we speak of ethmoidal disease we refer to suppuration in these cavities. The subject of ethmoid disease is to me exceedingly interesting, and is, I think, perhaps, the most interesting which is

[1] Dis. Ethmoidal and Sphenoidal Sinuses. Wiesbaden, 1886. (Compare also Schech.)

engaging the attention of laryngologists. I hope, therefore, that I may be allowed to refer somewhat briefly to the whole question of diseased processes here, prefacing this by the statement that I regard ethmoidal disease as not only by far the most frequent of all diseases of the accessory cavities, but as of very much more frequent occurrence than we ordinarily have been taught to believe, as will be inferred by the statement that in the past five years ninety-eight such cases have come under observation in my private practice. In the chapter on acute rhinitis, in all of our text-books on throat diseases, Bosworth among others, there is described a disease characterized often by nasal stenosis, frontal headache, intra-orbital pressure, asthenopia, watery discharge, and violent sneezing, which I very frankly confess I have rarely seen where I was enabled to detect a rational explanation of the symptoms in the morbid condition of the nasal mucous membrane alone, as seen by ocular inspection. I contented myself with the old teaching that these symptoms were to an extent reflex in character. I do not hesitate to say that I believe a very large proportion of the cases of so called acute rhinitis are really instances of acute ethmoiditis, and that such inflammation as may exist in the nasal mucous membrane is really secondary to the graver and more distressing conditions of the lining membrane of the ethmoidal cells. I thus endorse the statement made by that excellent observer, Moritz Schmidt, of Frankfort,[1] who, however, assigns these symptoms of a head cold to an involvement of some of the accessory sinuses, not confining it to the ethmoid cells.

Among the cases which I shall briefly analyze later, are a number of instances, both of acute ethmoiditis and suppurative disease, which have had their onset in unmistakable attacks of la grippe, which leads me to hazard the suggestion as to whether the influenzal type of la grippe is not really an invasion of the ethmoid cells by the specific bacillus which is supposed to be the exciting cause of that disease.

In a paper on ethmoid disease,[2] published two and a half years ago, I described five varieties of diseased conditions of these cells which practically reduced themselves to three, viz.: 1. Extra-cellular myxomatous degeneration; 2, intra-cellular myxomatous degeneration; and 3d, purulent ethmoiditis. I really think that, practically, we have but one primary morbid condition in the ethmoid cells, which progressively and with more or less rapidity develops into these three. In other words, that these three conditions are successive stages of one and the same disease. An acute inflammatory process of the mucous membrane lining these cells very soon either results in resolution or a chronic morbid process. Owing to the peculiar anatomical character of this membrane, a chronic inflammation tends to develop a soft, jelly-like thickening of the tissue, which takes on what we may describe as a myxomatous character. Now, this may persist for a somewhat prolonged period of time, giving rise to distention of the cells, with its train of symptoms already alluded to, which are, watery or muco purulent discharges, violent attacks of sneezing, headache, intra-orbital pressure, aprosexia, etc., and if the constitutional habit be neurotic, hay fever, and asthma, these symptoms being simply exaggerated on the occurrence of more or less frequently repeated attacks of acute inflammation, to which the patient is liable.

The further course of this disease I take it to be, in a certain small percentage of cases, is the crowding out from the ethmoid cells, through the normal opening, of this myxomatous tissue, which presents in the nasal cavity in the form of small polypi. Not that I believe the large proportion of cases of nasal polypi have their origin in the ethmoidal cells, for Zuckerkandl[3] has demonstrated conclusively that this is not the case. As the result of this inflammatory process within the cells, the thin walls become distended and we have a somewhat curious development, by which the outer wall of the cells yields before the pressure, and we have the middle turbinated bone crowded outward, and gradually an extension of these cells into this body. See Figs. 2 and 3. And here for the first time there presents a condition by which we may recognize a morbid process in the ethmoid cells

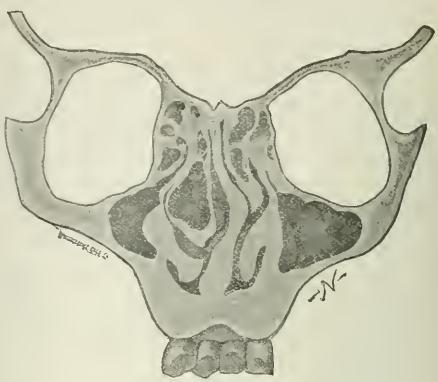

Fig. 2.—Distention of the Ethmoid Cells, with Extension into the Middle Turbinated Body. (Zuckerkandl.)

by ocular inspection through the nose; in other words, as far as rhinoscopic examination goes, in the inflammatory stage of the disease, this distention of the cells and extension into the middle turbinated body gives rise to a protuberance into the middle meatus, which is easily recognized, the middle turbinated body presenting as a rounded ovoid mass, usually in contact with the septum and encroaching notably upon the middle meatus of the nose. At the same time this curious myxomatous degeneration of the mucous membrane and lining cells conveys itself to the mucous membrane covering the outer wall, which is now the middle turbinated body in the nose, and lends additional aid in the recognition of the condition.

These two conditions constitute what Zuckerkandl has termed "ethmoiditis superficialis" and "ethmoiditis profunda;" the former term applying to the disease

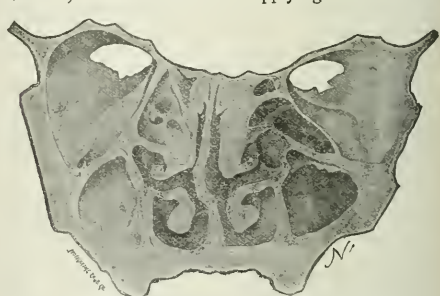

Fig. 3.—Distention and Extension of the Ethmoid Cells, with Displacement of the Middle Turbinated Body. (Zuckerkandl.)

when it is confined within the cells, and the latter designating the disease when the myxomatous degeneration has extended to the nasal cavity, making its appearance on the surface of the middle turbinated body.

The next stage in the development of the disease consists in suppuration. The time of its development may be very early or very late in the history of the disease, this being governed somewhat by adventitious circumstances. The method of its development seems very clear. The inflammatory process, involving the membrane within the cells necessarily gives rise to hypersecretion, which materially contributes to the intra-cellular

[1] Krankheiten der Oberen Luftwege. Berlin, 1894.
[2] New York Medical Journal, November 7, 1891.
[3] Norm. und Path. Anat. der Nasenhöle, Band 1, Auflage 2, s. 360.

distention, and also results in a closure of the normal orifice. The necessary consequence is practically the formation of an acute abscess, which, failing resolution, soon develops into a chronic abscess, or chronic suppuration of the cells, for I believe it to be an almost universal rule that where we have a chronic inflammation of a mucous membrane, with hypersecretion in a closed cavity, the tendency of the process is very rapidly to develop into a purulent action. We thus have established a chronic suppurative disease. The pus finds its exit through either the anterior or posterior ethmoidal cells; and I may state here, from a practical point of view, that the anatomical division of these cells into the anterior and posterior group is of no special interest to us in dealing with the diseased conditions, in that I believe they are really converted into a single group of cells by either a normal or a rapidly established abnormal opening between the two. The pus makes its way into the nasal chambers through one of the normal openings, either in front into the hiatus semilunaris, or through the posterior opening into the superior meatus. Thus on ocular inspection we may find the pus making its appearance either from beneath the middle turbinated body or from between the middle turbinated body and the septum above. As a rule, the pus from the anterior and lower opening makes its way into the lower meatus and is expelled through the anterior nares; while the discharge from the posterior opening makes its way into the pharynx, giving rise to the symptom so often complained of, viz.: that of dropping in the throat, in which way the disease may be confused with an ordinary naso-pharyngeal catarrh; although I should say here that the secretion of this latter disease is usually thick and adherent, and expelled by somewhat violent nasal screatus, whereas a dropping in the throat should always suggest the great probability of an empyema of either the ethmoidal cells or the sphenoidal sinus.

While the most natural exit for the pus is into the nasal cavity, this is by no means its invariable course, as is shown by the large number of cases in which the pus escapes through the os planum into the orbital cavity, giving rise to exophthalmus and orbital disease. Furthermore, we occasionally meet with exophthalmus from distention of the cells in the cavity, without escape of pus, as is still further and notably illustrated by the case reported by Bull,[1] of ethmoidal suppuration in which an artificial puncture through the orbit was followed later by a spontaneous rupture into the nasal cavities, the ultimate cure resulting probably from the latter.

As the result of the persistent suppuration the lining membrane of these cells necessarily becomes soft and very much thinned. The much-discussed question of necrosis of bone never has interested me greatly, because I regard its importance as much over-estimated. Zuckerkandl[2] states that he has never seen caries of the ethmoid cells, thus contravening Woakes,[3] who describes what he calls a necrosing ethmoiditis as practically the sole cause of nasal polypi. The membrane covering the bone is so far thinned and softened that to the impact of the probe it gives the sensation of being exposed. That it is genuinely necrosed I do not believe. The odor, moreover, which is almost constantly present in these cases in the later stage, is the odor of sulphuretted hydrogen developed from retained pus, and not the odor of bone necrosis. Hence in making our diagnosis I should not be disposed to attach so much importance to the use of the probe as many writers do, depending mainly for the diagnosis on the appearances about the middle turbinated body of distention, and on the myxomatous degeneration of the mucous membrane covering it. This deceptive sense of necrosed bone can be obtained by passing the probe either beneath the middle turbinated body toward the hiatus semilunaris, or above it toward the opening of the posterior ethmoidal cells in the superior meatus. I have frequently detected it in a normal and healthy nose.

Our most important consideration, of course, has to do with the question of treatment, and that this should be instituted early in the history of the disease and before the suppurative process has ensued need not be urged, in view of the very serious discomfort, and even danger, which attends the stage of empyema, and the great difficulty with which it is brought under control after pus formation has become chronic. In acute ethmoiditis the ordinary measures which our text books recommend in the treatment of acute rhinitis are indicated of course, and need not be dwelt upon, further than to say that of all measures I regard the use of the douche as most potent, directing that from one to two gallons of water rendered thoroughly saline be passed through the nasal cavities by means of the Thudichum douche at least twice daily. The water should be as hot as can be borne. This instrument I regard as devoid of the danger to the ears, of which Roosa has warned us, provided that the patency of each nostril be tested before its use and that the stream be made to pass into the narrowest nares, thus emerging without obstruction from the most patent side.

When the disease has reached the chronic stage without suppuration, I believe that, other measures failing, surgical interference should be resorted to in all cases, as we here have to deal with an affection which does not tend to undergo resolution, but one in which there is imminent danger of suppuration setting in at any time. The test that this chronic stage has been reached is to be found in the swollen and distended condition of the ethmoid cells, as shown by the projecting and swollen turbinated body, whether the mucous membrane covering it be in a state of myxomatous degeneration or simply turgescent. The object to be accomplished is to relieve intra cellular pressure, and this is accomplished by uncapping, as it were, the ethmoid cells. The steel-wire loop of the Jarvis or Bosworth snare is easily slipped over the projecting turbinated body and the whole mass removed, presenting usually in the form of an elongated ovoid shell. This also reveals to us the condition of the mucous membrane within the ethmoid cells, which may be either in a simple state of turgescence, or, as has not infrequently happened in my own experience, a soft, gelatinous mass of myxomatous tissue is found filling the cavity thus opened. If this does not drop out of place, it is very easily removed by the mouse-tooth forceps or the snare.

After pus-formation has occurred the problem before us, as before stated, consists in converting the large number of small cells which compose these bodies into a single cavity and establishing thorough drainage. In these cases the primary procedure is, as before, to uncap the cells by use of the snare, and after that I believe our best instrument consists in the use of the dental burr. Schaeffer, Moure, Cozzolino, Gleitsmann, and others prefer the use of the curette. I have never been able to freely manipulate this instrument in the ethmoidal cells or to break down the trabecular walls by its use. Its manipulation is hampered, and its action, to my mind, seems inefficient and not radical enough in extent. Grünwald's sharp spoon is a more efficient instrument, but still hampered in its action. The same criticism applies to the forceps and sharp spoon, as advocated by Zarinko.

That this disease can be radically cured, or even modified or controlled to any great extent, by the use of disinfecting lotions, as recommended by Lichwitz,[1] Hartman[2] Michel,[3] Schalle,[4] Myles[5] and Moure,[6] I do not believe. The small oval or round burr, attached to the dental

[1] New York Medical Journal, 1893, vol. lvii., p. 75.
[2] Loc. cit., p. 361.
[3] Nasal Polypus, Am. ed., p. 8 et seq. Philadelphia, 1887.

[1] Diseases of Accessory Cavities of Nose, Bul. Méd., Paris, 1893, lxxxvi., p. 963.
[2] Quoted by Berger and Tyrman, Dis. of Ethmoidal and Sphenoidal Sinuses, p. 12. Wiesbaden, 1886.
[3] Idem.
[4] Idem.
[5] MEDICAL RECORD, 1892, vol. xlii., p. 607.
[6] Manuel pratique des Fosses nasales, 2d ed., p. 535. Paris, 1893,

engine, or, better still, the De Vilbiss engine, in my hands has answered a better purpose than any other device. Manipulated with the De Vilbiss engine it is made to enter the ethmoidal cells either before or after they have been uncapped, when the trabecular walls are easily broken down or burred away. Its motion can be instantly arrested at will, when it can be made to act as a probe, exploring the cavity for exposed bone or such parts as it is desired to remove. In this manner our operation becomes not only intelligent, but, I think, absolutely safe, a consideration which of course is to be very carefully borne in mind, when we remember that we are separated in our operation not only from the orbit of the eye by an exceedingly thin plane of bone, but if we progress very far we are getting in close proximity to the base of the brain. I do not mean to intimate that at a single session the whole of the trabeculæ which constitute the ethmoidal cells can be opened out and thoroughly drained. In many of my cases the operations have been repeated a number of times at intervals varying from one week to a month, or even longer. During the intervals of course the patient is directed to use disinfecting lotions with as much intelligence and thoroughness as can be accomplished by the ordinary devices which we place in the hands of our patients for use. I have no special suggestion to make as to the character of these lotions, as thoroughness of application is of more value than the special character of the antiseptic used. Moreover, it should be stated that the operation is not attended with anything like the pain that we should suppose when we consider the exceedingly sensitive character of the parts operated upon. Of course the procedure is not an agreeable one, but it is not an especially painful one, provided that we can sufficiently reach the parts to thoroughly saturate them with a cocaine solution.

I may seem to the general practitioner to be discussing and describing not only radical but perhaps rough and even dangerous methods; but when we consider the great discomfort and distress to which a patient suffering from ethmoidal disease is subjected, and the still greater danger which threatens him, as has occurred, of involvement of other sinuses or neighboring cavities, such as the orbit, or even the development of the disease in the brain tissue itself, I think there can be no question that these radical procedures are not only fully warrantable but absolutely indicated.

The charge has not been infrequently made in the past few years that intra-nasal surgery has been very greatly overdone. Some of our English friends have delicately suggested that we attack the nasal tissues "with the energy of the backwoodsman," "with more energy than discretion," with recklessness and without justification. These charges are not deserved, and are unjust. We do not confine our work to the saw and burr and drill. The very large majority of our cases are dealt with without resort to surgical measures. But we meet with a large number of cases in which other measures are inadequate, and these we attack, not with the energy of the backwoodsman, but with the trained and delicate hand of the surgeon, who recognizes unmistakable indications and carries them out; the gratifying result fully justifying the means.

As before stated, during the past five years I have recorded in my private practice 97 of these cases, a brief summary of which I append. Of the 97 cases 3 were carcinoma and 4 sarcoma of the ethmoidal cells, which may be left out of consideration. As regards age, 3 occurred in the second decade of life, 14 in the third, 23 in the fourth, 28 in the fifth, 18 in the sixth, and 7 in the seventh decade. Sixty-one were males and thirty two were females. Fifteen cases were inflammatory in character, without suppuration or polypoid degeneration. Of these, 9 were cured, 3 were improved, and 3 disappeared. Twenty-nine cases showed myxomatous degeneration without suppuration. Of these 12 were cured, 10 improved, and 7 were seen but once or twice, and their progress not known. Twenty-two cases showed myxomatous degeneration, or fully developed polypi, together with pus discharge. Of these, 9 were cured, 10 improved, and 3 disappeared. Of the purely suppurative cases there were 27; of which 8 were cured, 12 improved, both as regards subjective symptoms and the amount of discharge, while 7 were seen but once or twice and not further noted. In nearly all these cases radical operative measures were instituted, as carrying out the suggestions already made. In many of them the simple irrigating measures failed to give relief, either to subjective or objective symptoms, and the cells were opened either by the snare or drill, or, and in many cases, both were used.

26 West Forty-sixth Street.

ON DYSPEPSIA NERVOSA AND GASTRO-INTESTINAL NEURASTHENIA.

By LEONARD WEBER, M.D.,

NEW YORK.

It is just ten years since Leube published his paper on "Dyspepsia Nervosa," and defined it as a disorder all the symptoms of which are caused by a functional disturbance of the nervous system, and especially of the nerves of the stomach, while gastric digestion remained normal both as to time and chemical process. Leube found this class of patients to be generally delicate, thin at the outset or in the progress of the complaint, rarely stout or of healthy appearance. In some cases there was a previous history of anæmia. Intermittens, renal or uterine trouble, sexual excess, or some real disease of the stomach that was cured, but left a state of nervous dyspepsia behind it; all cases were characterized by more or less suffering accompanying the act of digestion, which seemed to originate in the nervous system.

Prominent among the symptoms, as I have observed them, are a feeling of fulness and congestion in the head, headache, vertigo, cardiac palpitation, slight pseudo angina, dyspnoic oppression, abdominal pulsation. And on the part of the stomach a sense of pressure and fulness in the epigastrium, while palpation of the stomach generally reveals neither tenderness nor pain. Globus-sensation and pyrosis are rather frequent, and voluminous eructations of gas without odor or taste are very generally complained of. Nausea with occasional vomiting is not rare, and the vomiting may sometimes be rather severe and obstinate.

The appetite may be good, or bad, or changeable, and sometimes ceases after the patient has swallowed a few morsels. The bowels are generally constipated, seldom loose, almost always flatulent. In some cases nearly all these symptoms are present, in others again a few of them only. Great as Leube's merits have been in bringing the important subject of gastric neuroses prominently before us, it is nevertheless shown, not only by the labors of Ewald, Boas, Rosenthal, Bouveret, and others in this special field, but by the clinical observations of most of us, I believe, that Leube's standpoint is not sufficiently comprehensive, and we have to widen his definition of nervous dyspepsia, because we know that we meet numerous cases with all the symptoms of nervous dyspepsia, but also with disturbances of the secretory and motory functions of the stomach. Cases enough have been described where the secretion of hydrochloric acid is considerably diminished, insufficient for healthy digestion or even temporarily absent, not only for days but weeks; then normal again or increased, hyperhydrochlorie. There is generally a combination with motory weakness where hydrochloric production is diminished or absent, but with abnormal motory activity where there is supernormal secretion of hydrochloric acid. Gastralgia severe enough to simulate gastric ulcer with Burkhard's points douloureux in the region of the eleventh and twelfth vertebræ and in the epigastrium, I have noted sometimes, but they are variable and fugitive, not permanent as in gastric ulcer, aside of the other pathognomonic symptoms of the latter. From my own observations, therefore, I believe that for a

number of cases, at least, the designation "nervous dyspepsia" is too narrow, that they cannot be considered and treated apart from the other neurasthenic symptoms which are correlated to and associated with it, and that it is gastro intestinal neurasthenia as a part. Neurasthenia rather than nervous dyspepsia we have to deal with in a large number of cases. From my case-book I could add quite a little number of neurasthenias such as described by Ewald, and Burkhard, and Bouveret, who presented well-marked dyspeptic symptoms with the chemism of the gastric organ altered in various ways as marked above. It will be appropriate therefore, I think, to divide the cases into two classes: 1, dyspepsia nervosa with functional disorder of stomach; 2, neurasthenia gastro-intestinalis in general neurasthenia.

The causes of nervous dyspepsia are many. Aside of those caused by direct or indirect disturbance of the pneumogastric centre through cerebro-spinal disease or disease of peripheral nerves, there are gastralgias by reflex through affections of the genital organs, gall stones, renal calculus, a floating kidney, and the presence of intestinal parasites, particularly tape worm. But we are now concerned with those forms which are part of general naurasthenia brought about by physical or mental overexertion, or both, excessive care and excitement, sexual excess, debauch, masturbation, or by intoxication such as malaria, morphine, nicotine; also those by hysteria and such constitutional anomalies as chlorosis and anæmia.

With regard to age, sex, and the influence of life's vocation, my experience coincides with that of all other observers, I believe: *i.e.*, gastro-intestinal neurasthenia is prevalent among men between twenty and thirty, and is more often seen among brain-workers than among mechanics, though I have quite a little experience with the latter class also in that direction. Women are perhaps less often affected than men, and, for reasons easily understood, at an earlier period of life. With regard to children I have no personal experience of value, but some observers maintain that the disorder is not as rare among them as is generally supposed.

Now, with regard to the treatment of dyspepsia nervosa, I have always been delighted when I got hold of a case where I could remove or control the cause, and feel sure then to cure, or almost cure, my patient. For instance, a tape-worm by giving 10.0 of extr. fil. mar., a displaced uterus by a pessary, a floating kidney by a suitable truss, an irritable urethra by the use of the steel-sound and tepid sitzbath. Or when anæmia or chlorosis was at fault, by iron, quinine, and arsenic, salt-water baths, and change of climate, and by the elimination of malaria and nicotin poison where the attacks were produced by them. Of nerve drugs, I am not in the habit of prescribing opium or cocaine, except where there is severe gastralgia present; here I often use a cold wet bandage over the abdomen with a coil on top of it through which hot water is allowed to flow for some time—a plan of application suggested and recommended by Winternitz, that will often bring relief without morphine. Extractum cannabis, however, introduced by Germain-Sée in the treatment of nervous dyspepsia where there is much sense of pressure and discomfort felt after eating, I have often prescribed in doses of one sixth of a grain t.i.d, and been well satisfied with the results obtained. Some praise here the use of aqua chloroformi or atropia. Electricity also does well here, with a very large electrode over the epigastrium, as first proposed by von Ziemssen, especially also where there is a good deal of motory weakness of stomach. In cases accompanied by obstinate vomiting, I have found nothing answer so well as to make the patient fast for two or three days, giving meanwhile nutritive enemata. Last, but not least, a Weir Mitchell rest and feeding cure will be of service in certain female cases too well known to need description, and in those of men who are much reduced and present hysterical symptoms.

I wish that I could say half as much of positive results obtained by me in the management of cases of gastro-intestinal neurasthenia in neurasthenics, leaving out of consideration altogether those caused by organic disease of the central nervous system. So long as I did not understand the causal connection, or rather inseparable relation and interdependence of the general and local condition, I tried for cure and failed in the one as well as in the other state. Now that I know we cannot yet cure a case of grave neurasthenia, although they have quite occasionally a queer way of getting better by themselves, I do not try any more to cure them by active treatment, but I do them more good than before. By dealing more with the individual, regulating his life, correcting his had habits, admonishing him to spare himself and pay close attention to his dietary, physic his bowels from time to time to remove putrid material, and go on short vacations two or three times a year, I believe to succeed pretty well in keeping them in fair order not only, but putting them actually in the way to get as nearly well as they can. Of symptomatic remedies I know none better than those mentioned in the first class of cases, which we may more truly call nervous dyspepsia than the latter.

To be sure, we all know of neurasthenic dyspeptics who went to the high Alps of Switzerland, or to fine places at the sea, or to specially fitted sanatoria here and abroad, and were sent home cured. No wonder that they came home better after doing the very best things for themselves under the best possible conditions of climate, food, care, and rest, and recreation of mind and body; but it is at best a great improvement only, and it is generally not very long before we see them return to us with their old complaints.

25 West Forty-sixth Street.

Progress of Medical Science.

The Absorption of Iron. — Dr. Macallum finds that inorganic iron is absorbed (in guinea-pigs) by the intestinal mucous membrane. Whatever iron salt was administered, whether the phosphate, chloride, sulphate, or "peptonate," when the dose was not very large, the evidence of its absorption was very plain in the villi of the upper end of the small intestine, but in them only (*The British Medical Journal*). When the dose was large, the presence of iron in the villi was observed far down the intestine, but the reaction for iron was less distinct the more remote the villus from the pylorus. With very large doses of the phosphate or "peptonate" the villi near the cæcum gave an intense reaction. It is suggested that the reason for this difference is that when the dose of iron is small, and when, consequently, the quantity of iron in the chyme is small, it is wholly precipitated by the alkaline, biliary, and pancreatic secretions; as these three fluids do not at once and completely mingle, the iron is not at once precipitated, and consequently absorption goes on in the first few inches of the intestine. The acidity of a larger dose of iron salt may be sufficiently great to destroy the alkalinity of the chyme after admixture with the bile and pancreatic juice, and, when this is the case, the unprecipitated excess of iron-salt will go on down the intestine, and be absorbed lower down. When the oxide or the reduced metal is given, a certain quantity of the acid of the chyme is taken up in effecting their solution, and therefore in the intestine the alkalinity of the bile and pancreatic juice must go farther in the precipitation of the iron. Speaking generally, the larger the amount of free acid in the chyme the greater must be the quantity of iron absorbed. Sulphides in the contents of the bowel will also precipitate the iron still in solution. On an ordinary diet, therefore, the extent of intestinal mucous membrane which absorbs iron must be, in proportion to that which does not, remarkably small. Macallum, however, thinks it possible that in anæmia there may be a diminution in the amount of the biliary and pancreatic secretions, a condition which, for the reason above stated, would prevent precipitation, and thus favor

absorption. His grounds for stating that iron salts are absorbed, a fact which has been denied, are drawn from microscopical examination of the mucous membrane under various conditions. In well-fed guinea pigs taking iron, the intestinal mucous membrane, after treatment with alcohol, assumes, when treated with ammonium sulphide, a more or less dark color, due to the formation of sulphide of iron, which, under the microscope, is seen to be limited to the subepithelial portions of the tips of the villi. Here it is deposited in leucocytes which surround the end of the lacteal vessel. When the dose of iron is larger, or, apparently, when the administration is continued for a long time, the iron is present also in the epithelial cells themselves, and passes from them by a process of internal secretion into the plasma of the venules. These venules are the portal radicles, and leucocytes containing iron are found in capillaries of the liver, and the peripheral cells of the lobules contain iron. Similar leucocytes are found in the spleen. Beyond this point the iron was not traced, and the question whether it is ultimately assimilated and fixed as inorganic iron remains unsettled; but the research serves to prove that iron salts have not, as has been asserted, merely a stimulant action on the epithelial cells of the mucous membrane. Any stimulant action they may exert is a concomitant of their absorption. Though some of the subepithelial leucocytes of the villi appear thus to carry part of the absorbed iron into the general circulation, the more important agent in the transferrence of the inorganic iron from the villi to other parts of the body is the blood plasma.

Thioform —Dr. Julius Schmidt states that thioform is a grayish yellow powder, which is a chemical combination of bismuth, sulphur, and salicylic acid. It is tasteless and odorless, insoluble, and was first prepared as a substitute for iodoform. This expectation has been verified in so far that surgically its value is equally great, but the specific action of iodine as required in tuberculous affections is not obtained. When applied to fresh wounds thioform produces rapid drying of the surface, leading to a more rapid cicatrization than has been observed after the use of any other application; this was noticed even in extensive surface lesions, such as burns, weeping eczema, and gangrenous patches, the latter having healed in four days. The author tested the powder in five cases of ulcer of the leg which had resisted other treatment. The ulcer having been cleaned and disinfected, the thioform was thickly dusted over it, and covered with cotton-wool and a bandage. Every fourth day the whole dressing was changed, and though the patient continued to walk during the treatment, the cure required two or three weeks only. Some pain was occasionally produced, but no sign of irritation could be seen. Similar results in the practice of other surgeons are given. Finally, the author used thioform internally after having satisfied himself as to its non-poisonous character, and with daily long-continued doses of fifteen grains, better, though similar, results were obtained than with salicylate of bismuth.

Tuberculous Typhlitis and Appendicitis.—Dr. Reclus observes that the clinical reports of tuberculosis of the cæcum have accumulated rapidly during recent years. The cases of Boully, Terrier, Hartmann, Reynier, Broca, Roux, Salzer, Billroth, and Hochenegg, the anatomical researches of Duguet, Spillmann, Hérard, Cornil, and Hanot, and the recent descriptions of Pilliet and of Le Bayon, have thrown some light upon this hitherto but little recognized affection. The cases have been numerous enough for one to attempt to tabulate a statement of the clinical manifestations of tuberculous typhlitis and appendicitis. Reclus himself has observed two cases where a long-continued clinical history has been sustained by post mortem examinations. This affection may manifest itself as a localized tuberculosis without infiltration, without concomitant degeneration of the lungs and other important viscera, developing itself around the ileo cæcal valve and its vicinity without invading the other tissues. This suffices to class this tuberculosis among the surgical tuberculoses; from the moment it is confined to a limited focus and this focus is accessible, in such favorable circumstances intervention is legitimate. Therefore, in certain cases—and the observations are becoming daily more numerous—perityphlitic tuberculosis is an ordinary surgical affection. As to the etiology of this condition the literature is scant; the degeneration here, as in most of the other tuberculoses, seems most frequent in adult age, but the young do not escape; a little boy aged ten has been cited as dying from this affection; the greatest number of the cases published, however, have been in individuals who neighbored upon or who had passed thirty years of age. It seems that two distinct anatomo-pathologic forms may be described, associated with different symptoms: the one a fibrous or hypertrophic and the other an ulcerous variety; moreover these may be combined, or there may be noticed all the intermediate stages between them. The majority of the cases thus far reported have been characterized by an abundant new-formation which gave to the degeneration the appearance of cancer. In this form, the tumor after incision of the abdominal parietes appears fused with the double parietal peritoneum, with new membranous formations which cover the intestines and mark their limit; the original form of the cæcum and its appendix, the ascending colon, the ileo-cæcal valve, and the termination of the ileum cannot be recognized. There is a muscular and a mucous hypertrophy at this point which causes the intestinal wall to measure at times up to three or four centimetres. The lesions ordinarily are most marked around the ileo-cæcal valve; the valve is profoundly altered from the beginning; in its place is found an irregular cavity, covered by a partly ulcerated mucosa; the loss of substance is irregular, its edges sinuous, the base sanguineous with small rigid villosities. The appendix is bent upon itself and adherent at times in front of the cæcum, at times behind it; it is lost in the thickness of the false membrane.

The second or ulcerated form may present thickening of the serous and false membranes around the intestinal loops, but these have not the remarkable hypertrophy of the other form; on the contrary, the ulcerative process predominates, the mucosa has often completely disappeared, especially at the site of the ileo-cæcal valve, where ordinarily a veritable cloaca is found due to the destruction and anastomosis of the various intestinal segments. The softening of the cheesy masses in the tunics and the neighboring ganglia has given rise to puriform collections, which run in various directions, but generally make their way toward the abdominal wall; through the resulting fistulæ fecal matter and pus escape. These pyostercorous canals are often multiple. There exists a third form which Professor Cornil has especially studied. Often, in place of the fecal concretion which forms in the appendix, some foreign body, bone, a fruit seed lodges there, and by its presence irritates or perforates the vermiform process and tuberculosis forms, the bacillary colony destroying the walls. The symptom of the first form in the beginning is the existence of deep pains in the region, lasting for some hours during the day, then disappearing and appearing anew. This attack subsides only to reappear in a few weeks in a more aggravated form. Constipation accompanies it and may be extreme. On examination the presence of a tumor is demonstrated in the right iliac fossa, hard, resisting, bosselated, irregular. In these cases where softening has taken place fluctuation may be pronounced, or the skin becomes red and the abscess opens with the formation of a fistula. The diagnosis becomes plainer still when in place of the extreme constipation a rebellious diarrhœa appears resulting from the abundant and persistent ulcerations of the mucosa. The general health does not suffer in either form at first. As to the treatment of these cases, surgical intervention is the only proper and justifiable course.—*The Medical and Surgical Reporter.*

Clinical Department.

A SOURCE OF INFECTION IN CORNEAL ABSCESS.

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It is not the purpose of this paper to consider the nature and variety of micro-organisms which cause abscess of the cornea. The probabilities are that the septic cases are responsible for most purulent inflammations of that tissue. But it is important to learn where these septic germs arise and how they reach the eye. We know that the tears and conjunctival secretions contain them, and late investigations have proved that the cutaneous edges of the lids, especially about the roots of the lashes, are surgically unclean. The greatest source of infection is the lachrymal sac, and woe be to an eye if its cornea is injured during the course of a purulent dacryocystitis. I am inclined to the opinion that the pyogenic cocci are not always so virulent as we have been taught to believe; for very few eyes could survive the simplest operation which necessitated an incision or puncture of the cornea. Therefore, it is not unreasonable to think that in a large majority of instances the conjunctiva of an unwashed eye is, for all surgical purposes, aseptic.

In an experience of fifteen years, during which time I have made many extractions and corneal incisions, I have never had an instance of suppuration, and I do not take any antiseptic precautions other than wiping the lids with a bichloride solution, 1 to 2,000, taking care that the instruments are clean. Of course, it is to be understood that all such cataract operations were made on uninflamed eyes.

Many cases of abscess of the cornea are the result of infection from the lachrymal sac, the mucosa of the sac being in a condition of purulent inflammation. Many other cases of corneal abscess are not complicated by that disease. In such instances I have usually found the source of the infection to be the mouth. It is not an exaggeration to say that the mouth of an unclean adult is often extremely dirty. Should the reader desire proof of this statement, let him examine the teeth of the ordinary dispensary patient, or, what is more agreeable, take the opinion of a dentist. Unless extra care is taken by most persons the tartar will collect around the roots of the teeth, which will ultimately excite an alveolar pyorrhœa and, finally, recession of the gums. During the course of that disease the mouth may be horrible and the smell disgusting. No wonder the bite of such persons can be fatal. If we take a minute particle of the mass of decomposing food and pus from between the rotting teeth and examine it through an eighth objective, after staining the cover-glass preparation by Gram's process, we will be astonished at the multitude and variety of micro-organisms. I cannot conceive how the pharynx and nasal passages can be healthy if the mouth is so diseased. The mass of organisms cannot remain localized about the teeth, but must infect the entire mucous tract, and by continuity reach the conjunctiva. They do not necessarily inflame that membrane, nor do they excite such disturbances in the lachrymal passages as would be detected by the patient or careless observer, but the mucous membrane of the eye is infected when an intentional or accidental wound of the cornea may suppurate.

For some time I had been suspicious that there was some relation between a dirty mouth and a suppurating cornea, when the following case rather convinced me.

M. B——, aged forty-three, a farmer. While cutting weeds something hit him in the eye. He did not pay any particular attention to it, and would have forgotten the accident had not his eye inflamed three days afterward. He was cared for by his family physician, who referred him to me ten days after the accident. When I saw him, his cornea was destroyed by an abscess. He had no disease of the lachrymal passages, but his mouth was fouler than the uninitiated can conceive. His breath overcame me. Is it surprising that he lost his eye?

Some weeks ago I saw another similar case.

F. N——, aged about thirty, laborer, was wounded in the left eye by a piece of stone. He complained of the injury from the first, and, when I saw him several days afterward, he had a suppurating ulcer of the cornea with hypopion. The ulcer was round, 3 mm. in diameter, with a dirty white floor and ragged edges. There was no evidence of dacryocystitis, but there were evidences of a foul mouth. The ulcer was completely destroyed by the actual cautery; the eye bathed every two hours with a bichloride solution, 1 to 4,000. The patient was introduced to, and taught the mysteries of a tooth-brush, as much care being taken to clean his mouth as his eye. The eye did not improve, and when the hypopion filled the anterior chamber, I made the Saemisch cut, and removed the pus *en masse* with forceps. From then on the patient improved, and was discharged six weeks afterward with useful vision.

At present I have on hand a case of hypopion keratitis evidently caused by infection from the mouth. The patient is an Italian miner, who has suffered for years from alveola pyorrhœa. His mouth is in a dreadful condition; the roots of all his front teeth are exposed, and the spaces between them and the receding gums filled with tartar, pus, and decomposing food.

If the source of infection in the cases above reported was the mouth, it behooves us to pay some attention to oral cleanliness in the treatment of suppurative keratitis; and since this may account for some distressing and unexpected results following cataract extraction, we should be especially careful in that regard before undertaking that operation, since we know that old people are apt to be careless, and usually suffer from bad gums and decayed teeth.

AN UNUSUAL CASE OF PERFORATING APPENDICITIS—DEATH FROM HEMORRHAGE DUE TO RUPTURE OF THE COMMON ILIAC VEIN.

By J. C. LEWIS, M.D.,

PANAMA, N. Y.

B. E——, fourteen years of age, was taken sick on Friday, March 23d, with vomiting, chills, and pain in the bowels. The pain increased in severity until Sunday, March 25th, when I was called to see her. I found the patient inclined to lie mostly on the right side, with limbs flexed. Temperature, 103° F.; pulse, 135. Her bowels were slightly swollen and tympanitic, with tenderness especially marked in the right iliac region. The patient had taken for her relief nine of "Carter's" pills and one tablespoonful of castor-oil, without, however, obtaining any movement of the bowels more than a few small scybalæ, and at one time, on Saturday, March 24th, about a tablespoonful of fresh blood was passed. The patient ascribed her sickness to some peanuts which she had eaten at a party on Friday evening, March 16th.

The treatment pursued was the use of large enemas with opiates to relieve the pain. On Monday and Tuesday the symptoms were unchanged, except that the temperature rose to 104° F., the pulse varied from 120 to 140, the countenance became cadaveric and expressive of severe pain. The swelling and tenderness in the right iliac region became more manifest, with point of severest pain an inch below McBurney's point. On Tuesday, while up in a chair, the patient fainted away, and it was quite difficult to restore her, and for an hour or more her breathing was labored. The enemas had been continued without any success. I became convinced that the patient had appendicitis and recommended an operation. On Wednesday, Dr. Murphy, of Sherman, N. Y., saw the case with me and confirmed the diagnosis, but advised waiting two days and keeping up the

use of the enemas, as her symptoms seemed somewhat improved, the pulse having come down to 100, and the temperature to 100½° F., and the countenance was improved, though pain, swelling, and tenderness of bowels remained the same.

On Friday, March 30th, with a view to an operation, Dr. Seabury, of Sugar Grove, Pa., was called, and met Drs. Murphy and Glidden. The patient's condition was unchanged, except that the pulse was down to 90, and the temperature for the last two days had ranged from normal to 100° F. The result of the consultation was a delay in the operation. On Saturday, A.M., the temperature was only 96½° F., and the condition otherwise unchanged, except that the swelling in the right iliac region seemed less prominent. The bowels were but little swollen and tympanitic, but pain was not lessened. The bowels had not moved from enemas, which had been continued.

Dr. John Parmenter, of Buffalo, was called, and operated in the presence of Drs. Seabury, Glidden, Murphy, and the writer.

At the time of operation the physical examination showed a good countenance, a clean and moist tongue; respiration, 20; pulse, 100 (full and regular); temperature normal; abdomen slightly tympanitic and not remarkably tender. In place of a perceptible tumor, only dulness was manifest in the right iliac region. This extended toward the median line. Cœliotomy was made in the median line, and after cutting through the abdominal wall pus welled up in the incision. Omentum formed the background and seemed intimately adherent to the intestines beneath. The pus seemed to come mostly from the right side, and upon examination a large abscess cavity was discovered in the right iliac region. Incision was made over this; that is, at the right border of the right rectus muscle, through which a pint and a half of malodorous pus was removed. The intestines were found matted together, and for fear of disturbing the adhesions no force was used in the abscess cavity. This was drained with iodoform gauze, a counter-opening in the loin having first been made in order to more freely drain the parts, and the patient was put to bed in practically the same condition as before the operation. She became restless in coming out from the anæsthesia and tossed about in the bed, requiring the efforts of the bystanders to restrain her. An hour after the operation she became restless a second time and showed signs of collapse. Examination revealed the bed and the dressings posteriorly to be saturated with blood, and, notwithstanding the generous use of stimulants, she shortly died.

Autopsy, immediately after death, revealed the following conditions: There was pus throughout the whole abdominal cavity, covering all the viscera, even occupying the space between the liver and diaphragm. In the right iliac region, the ileum for some twelve inches was intensely congested, and at the junction of the ileum and cæcum the parts were gangrenous. The cæcum contained three gangrenous openings, averaging one-fourth of an inch in diameter. The distal three-fourths of the appendix was gangrenous and separated from the proximal end, and lying in the *débris* was a peanut. The healthy condition of the proximal end precluded the idea of the peanut having passed through from the cæcum by this route, so that the inference is that it must have come through one of the openings in the cæcum and was deposited in the neighborhood of the appendix. The portion of the ileum near the junction at the cæcum, as before stated, was in a gangrenous condition and bent sharply downward to become attached to the common iliac vein. In this latter structure a small opening, out of which exuded blood, was discoverable, and from this area, through the posterior opening in the flank, blood had continually poured until death ensued. The amount of blood exuded in a given time must have been comparatively small, and in all probability the rupture of the vein occurred during some of the violent movements of the patient on coming out from her anæsthesia, for at the time of the operation no hemorrhage of any kind was perceptible.

The following features seem worthy of notice:

1. The absence of marked symptoms of diffuse suppurative peritonitis.

2. The cause of death—from hemorrhage.

3. The absence of fecal impaction, which was supposed to exist in connection with appendicitis, from the fact that no satisfactory movement of the bowels had been obtained after the taking of so much physic.

4. The necessity of an early operation in cases presenting marked symptoms of appendicitis.

THE INFECTIVITY OF PHTHISIS PULMONALIS —AN INSTANCE.

By CHARLES O. MAISCH, M.D.,

NEW YORK.

Some weeks ago I was consulted by a man whom I have known for a number of years, whose mode of living, surroundings, and family were perfectly well known to me.

The patient is a German, sixty-two years of age, well preserved, and weighs about two hundred pounds; antecedents and family history good, except that he had pneumonia a year ago.

He states that he has lost forty pounds in the last four months; his complaints are those of a patient in advanced consumption—cough, profuse expectoration, occasional hemorrhages, anorexia, sweating, wasting, etc.

Physical examination disclosed both apices to be involved, and the sputum I examined contained the tubercle bacillus in large numbers.

The further history is important. Two years ago this man lost a son, aged twenty-three, who, after a sickness lasting six or seven months, died of pulmonary tuberculosis. About three months later, the young man's mother, who had been nursing him, began to sicken. She was a German, fifty-nine years of age, strong, robust, and well-preserved, weighing upward of two hundred and twenty-two pounds, and had a good family history. She gradually failed, and died after an illness lasting some twenty months, during the last of which she had frequent hemorrhages from the lungs and intestines, and almost constant diarrhœa.

This was five months ago. Upon visiting my patient at his home, I found that he always expectorated on the walls, floors, and in the corners of his apartment, the place of special selection being under his bed. This had also been the practice of the deceased members of his family.

The daughter who takes care of the sick man says that their attention had never been drawn to any danger from this habit, but that the physician who had attended ordered a saucerful of black (crude) carbolic acid to be kept in the room, evidently with the intention of combating or lessening the evil.

It is, of course, impossible that the emanations from a saucerful of crude carbolic acid would have sufficient germicidal potency to make any impression upon an atmosphere loaded with the germs of latent tuberculosis.

There have been two deaths, a third member of the family is hopelessly sick, and a fourth, a daughter, aged twenty-two, is worn out and delicate from long and constant attention to the sick (brother, mother, and father). She sleeps in the same room with the sick man, and slept at the side of the mother during her illness, constantly inhaling the dried products of the expectoration, which were everywhere, and she now is in a fair way to become phthisical, if she is not so already.

Without entering upon the details of what prophylactic measures should have been employed in these instances, it will be readily seen that, with proper hygienic precautions and intelligent co-operation of the family in the first case, the last two, and possibly the third, would probably not have occurred.

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OLIVER WENDELL HOLMES.

How familiar has been the sound of this name! How deep is the regret with which we add in reverential tone that Doctor Holmes is dead. But is he dead? Do such men really die?

He has won the love, the admiration, the respect of two hemispheres; his influence has extended as far as the English language is understood; his teachings have been a benefit to the whole human race. His loss is not one to be felt by one community. Boston cannot claim him, nor Massachusetts, nor North America. He belongs to the world. Proud as we are to think of him as a member of our profession, and proud as we are of his achievements in it, we realize that his great work in life had more to do with making people better spiritually than making them well physically. Physician by education, he devoted himself to practice and the acquisition and imparting of scientific knowledge. Poet by nature, he spent his leisure time and declining years in those writings which have so endeared him wherever they have been read. Philosopher by thoughtful study and love of his fellow-man, he made for many life's path less rugged by kind and philanthropic words, and when his own long path brought him toward life's foot-hills he was content and said, "he should sorrow deeply if he had the idea he was to become helpless in body and mind." This was spared him. He reached the end, "eighty-five years young," as he has expressed it, and happily met death as a little child meets sleep, unconscious of fatigue, and only mindful of a day more full of pleasures than of pain.

To his students of twenty or thirty years ago, as they recall the words of the genial Professor in describing the arch of the female pelvis, "Gentlemen! this is the triumphal arch under which every candidate for immortality has to pass," the thought must occur how nearly has been attained that immortality of which he spoke, and how like a triumphal march the whole modest life!

Almost the last leaf upon the tree (for nearly all his contemporaries had fallen from the bough which bore the date of his birth and college graduation), he still clung to it with a vitality which indeed elicited a smile, but one wholly of admiration, and carrying with it a "God bless you!"

The ever-speaking presence in his charming books, the genial infusion therein of his cheerful spirit, the lofty tone of his pathos, the sound philosophy of his humanity, the soul-touching sweetness of his poetry, the subtle humor of his generous and loving nature, will keep him always with us through the never-ending flight of future days.

THE PERCENTAGE OF IRREGULAR PRACTITIONERS IN THE UNITED STATES.

ACCORDING to Polk's Register, Toledo, with a population of 100,000 in 1890, had 209 physicians in 1892, of whom 70.3 per cent. were regulars. In Cincinnati, a city with a population of 296,908, there are 596 physicians, of whom 70.6 per cent. are regulars. In Cleveland, with 270,000 inhabitants, there are 545 physicians, of whom sixty-three per cent. are regulars.

Out of the first hundred names (*Medico-Surgical Bulletin*) taken from a list of physicians in small towns, arranged alphabetically by post-offices, including Aberdeen, Ada, Adams Mills, etc., we find sixty-six per cent. classed as regulars.

The explanation of this lies in the number of cheap medical colleges. Ohio and Missouri are States which are offensively prominent in this respect. Thus Ohio has a population of 3,672,316 and seventeen medical colleges, while New York, with a population of 5,997,853, has only twelve.

The evil is being slowly corrected, however, and we have no doubt that in ten years the percentage of educated physicians will be greatly increased, while at the same time that of cheap medical colleges will correspondingly decline.

It would be quite unjust also to suppose that two-thirds of American physicians are irregular practitioners and uneducated men. In New York, for example, the law requires evidences of graduation from a college of respectable standing, and the percentage of ignorance is small. The same is true of many other States.

FOOT-BALL AS A MEANS OF PHYSICAL DEVELOPMENT.

THE advent of the foot-ball season has already given rise to discussions about the value and dangers of the game. As to the dangers there is no longer much dispute, and it is stated that the new rules will not make any appreciable difference. We can only trust that the record of last fall's mortality will not be repeated.

As to the practical advantages of the game as a means of physical culture and mental stimulus, there is still much controversy. What is wanted is, however, not so many opinions and more facts. Dr. Beyer, in the *American Journal of the Medical Sciences*, has contributed somewhat to our actual knowledge of the matter. He finds that in the Annapolis Academy the foot-ball players are four per cent. superior in height, twenty-eight per cent. in weight, twenty-one per cent. in lung capacity, and forty-nine per cent. in total strength. These were only average players, many of whom never played in a big game, and nearly all the measurements represented the player as he was at the beginning of the training period. Between the average Yale student and the average American foot-ball player, the players were one year and one month older, but they were 2.8 per cent. taller, twenty per cent. heavier, had ten per cent. more lung capacity, and were forty per cent.

stronger than the fifty mercantile grade of Yale students. Between average American players and Amherst students the comparison is on rather a different footing, because here the students are nearly two years older than the players; but the latter have a superiority of three per cent. in height, twenty-three per cent. in weight, twenty per cent. in lung capacity, and thirty-seven per cent. in total strength.

This all shows simply that the bigger, stronger, and more active men are selected for foot-ball. As it is just the opposite class who most need physical education, it seems as if these figures furnish a very telling argument against foot-ball as a means of securing a good general athletic training. The strong boys train and play; the weaker sit around, drink beer, smoke cigarettes, and shout.

Dr. Beyer gives some further statistics which have a rather academic interest. They show that after two months work at foot-ball, the player gains four or five per cent. in weight, about four per cent. in lung capacity, and fourteen to sixteen per cent. in general strength. This gain in strength continued for a long time after training. The lung capacity was not much increased. As compared with rowing and gymnasium work, Dr. Beyer shows that foot-ball is inferior as a means of physical development, as by the first two methods the physical strength was increased about twenty-eight per cent.

The case for foot-ball is not helped by Dr. Beyer's investigation.

AN ANTI-CORSET LEAGUE.

Every month brings us news of a new "anti-" society. We gave notice recently of the formation of an anti-opiate league; now the London papers inform us of an Anti-Corset League, which has been organized at Liverpool.

The objects of this association consist in inculcating true principles of clothing, which neither offend the eye nor the requirements of health. The use of the corset will be specially discouraged, but its place will be taken by an easy and natural form of support, consistent with the wholesome development of the body and the due exercise of its functions.

This easy and natural support is not to be the male arm, as might be supposed by frivolous minds, but is a pliable, plaited affair, conforming to hygienic principles and the natural curves of the trunk. There is no article of apparel which has been so vigorously, and we have no doubt justly, criticised as the corset; but it stays just the same, and we fear it will continue to do so. However, the Anti-Corset League has our sympathy and support. The corset is always a source of some danger, and in a good many cases does positive harm.

Placarding of Apartments Where Contagious Disease Exists.—At the last meeting of the Board of Health a recommendation made by Dr. H. M. Biggs was adopted, providing for the better protection of the public by the placarding of all apartments where there are contagious diseases. The warning placards are to be in different colors: white for diphtheria, red for scarlet fever, and blue for measles.

News of the Week.

Death of Dr. Oertel.—Telegraphic news reports the death of Dr. Oertel, of the Hygienic Institute of Hamburg, from Asiatic cholera contracted while making investigations of infected water from the Vistula.

Dr. Pliny Earle's Bequest to Leicester, Mass.—The town of Leicester, Mass., has received six thousand dollars under the will of the late Dr. Pliny Earle, for the erection of a building for the public library of the town.

Dr. R. Matas has been appointed Professor of Surgery in Tulane University, New Orleans.

A Forty-five day Fast.—For forty-five days Professor George Sloane, of Chicago, has lived on morphine and mineral water. No food has passed his lips. He began his fast to relieve pain in his stomach.

Li Hung Chang, says his biographer, took a deep interest in medical missionaries, and among his contemplated reforms was the introduction of Western medicine. "If these people," he said to me one day, "ever come into the Chinese heart, the physician will open the door."

The Serum of Asses.—Under the title of a "New Cure for Consumption," a lay contemporary, says the *Medical Press*, announces that Dr. Viquerat, of Geneva, after a long study of tuberculosis, has reached some extraordinary results by a treatment which consists in the subcutaneous injection of the serum of asses. Twenty-seven tuberculous patients of the second and third degree have undergone this treatment; twenty five of these cases, it is said, had been given up by their physicians as lost, but were, it is alleged, entirely cured, the names and addresses of these lucky twenty-five being authenticated by an authoritative report. On the strength of this, it is further stated that a philanthropic Genevan has founded the Viquerat Institute for the treatment of persons whose case is looked upon as hopeless. We fear that our contemporary is the victim of a joke.

Mushroom Colleges.—It is scarcely known on this side of the Atlantic (says the *Medical Press*) how easy a matter it is to found a mushroom college in the United States. In speaking upon this question our contemporary the *Lancet Clinic* recently observed that, "In Ohio any five men can organize and obtain a legal college charter, and with it in six weeks, or six days, can grant a legal diploma. Hence, the only protection for the people, and for the medical profession, is to be found within the medical profession itself." Our contemporary adds: "What a farce! It is difficult to understand how such a deplorable state of things is allowed to persist. Why are not new laws passed, and the medical education of the country placed upon a proper footing? The public would be the first to benefit by the change, and the status of the profession would at once be raised." It is but fair to add that the conditions in Ohio are exceptional, and that in the great majority of the States graduates from such institutions are not allowed to practise.

The Medical Society of Virginia will hold its next annual meeting in Richmond, Tuesday, Wednesday, and Thursday, October 23, 24, and 25, 1894. The subject for general discussion, open to any physician registered in attendance, is appendicitis.

The New York State Association of Railway Surgeons will hold its annual meeting Thursday, November 15, 1894, at the New York Academy of Medicine. All railway surgeons of the United States are invited to attend.

A State Medical and Surgical Association has been organized in Jackson, Miss. A membership of one hundred and twenty names was enrolled. The officers are: Temporary President, Dr. J. H. Lucas, of Greenville, and Dr. H. H. Hughes, Secretary.

The Tri-State Medical Society of Alabama, Georgia, and Tennessee.—The sixth annual meeting of the above Society was held in Atlanta, Ga., on October 9th, 10th, and 11th.

An Excited Practitioner.—A Kentucky doctor writes to the *Louisville Medical Monthly* like this: "The hungry and unprincipled learned physician does more harm than an honest one of less capacity. He tramples upon your feelings; he lies to your people; he makes capital out of your labor; he boldly takes possession of a case when he is accidentally called upon; he introduces a speculum, and tells your patient she has lacerated cervix, from carelessness of her attendant; he calls, or sends wife (who belongs to the same euchre club, or church), to see how she is getting along. You call him in consultation, and he drops in socially afterward, just because he was passing. You can't lance a boil; you must send for the surgeon (who treats measles, whooping-cough, and obstetrical cases). This surgeon is your friend socially, but takes your cases, and when called in your place, tells the family how he would have treated the case if he had seen it in time. A plain case of belly-ache is now a case of appendicitis, and the regular family doctor is 'not in it.' All kinds of ovarian troubles meet with prompt removal at the hands of some so-called specialist. A family doctor can't set a common fracture, and if he does, on his return call he finds this so-called surgeon has taken off his dressing, and has dressed it himself, with the excuse to his friend, the family M.D., that he had to, as the family asked him. You are called to a man hurt in a railroad accident, or at a fire, and spend all night ministering to his sufferings; next morning you are called to the telephone, and notified that the railroad or fire department doctor will take care of your patient, as he is paid by the company, and you can take a walk. I have met with all the above abuses time and again, and I have always kept my temper, remembering a physician should be a gentleman. But I have changed my mind, and this is about what I intend to do: take the next unprincipled doctor by the neck, and make him think that old Drs. Kellar, Gilpin, and Ross are still alive. Yours, etc., F. E. CORRIGAN, M.D."

Pneumatic Tires for Hospital Ambulances.—The makers of hospital ambulances have learned something from the bicycle makers. They are now using the pneumatic tires, which save the jarring and jolting.

Gift to Hospitals.—It is announced from Vienna that Baron Albert de Rothschild has given half a million florins ($250,000), to be called the "Bettina Fund," to the Vienna hospitals. Out of this sum a pavilion is now being built for women suffering from cancer, on the grounds of the Empress Elizabeth Hospital, in the western suburb of Rudolfsheim.

The Mississippi Valley Medical Association meets at Hot Springs, Ark., on November 18th.

The Southern Surgical and Gynecological Association meets in Charleston, S. C., November 13th.

Chicago Medical Colleges Unite.—An alliance offensive and defensive will probably soon be entered into by the Northwestern University Medical School, Rush Medical College, and the College of Physicians and Surgeons, whereby there shall be between these institutions absolute uniformity in respect to entrance regulations, and also in respect to the methods of recording conditions of admission of each member of the class. The primary object of such an arrangement is that each party to the agreement shall promptly inform the other parties of any candidate for admission to the class, so that the other parties shall be protected against accepting rejected candidates. A similar agreement is in a fair way to be consummated between the homœopathic medical colleges of the city.—*Chicago Medical Recorder.*

Hospital for Life-savers.—The Marine Hospital Bureau has issued a circular carrying into effect the law extending the benefits of the marine hospitals to the keepers and crews of life-saving stations. A list of nineteen hospitals where they can be treated is given.

The Doctor's Doorman.—The French papers, says the *British Medical Journal*, are commenting with a kind of awe on the fact that a site in the Rue de Vaugirard in Paris, which was surveyed the other day and valued at 600,000 francs ($120,000), turned out to be property of a former hall porter of Ricord's. That sum certainly represents very pretty pickings, but we have little doubt that the case could easily be paralleled in this country. The august functionary who guarded the portals of a certain court physician used, it is said, to think, like the Emperor Titus, that he had lost a day when he did not pocket six or seven sovereigns in "tips;" another estimated his revenue from what he playfully called the "guinea bell" at £600 a year; a third ran his master (a celebrated specialist now deceased) as if he were a show, and had a regular scale of prices for admission, with reserved seats—on the stairs or in the hall opposite the great man's door—and other special privileges for such as cared to pay for them. This sort of thing is still, we believe, a custom of the effete East.

The Fauna of Dead Bodies.—M. Mégnin, in a work presented to the Paris Academy of Medicine on the fauna of dead bodies, indicates the importance of these entomological studies with regard to medical jurisprudence. The insects appear in relays according to the period of putrefaction. The first which appears is the musca curtonea and callophora. It is present on dead bodies buried in the most careful manner. The eighth group, coleoptera, are found in dead bodies which have been buried four years. The dust that remains after the decomposition of the body is really the excreta of these animals.

A French Physician, Dr. Grellety, advises doctors to marry a pretty woman without vanity, an intelligent woman who does not make too great a display of what she knows, and above all an amiable one. If this seems too much, profound love will make up for many deficiencies.

A Busy Doctor.—A Swiss doctor is said to have counted his steps by a pedometer last year. The total was 9,760,900, or an average of 26,740 daily. This makes about fifteen miles a day.

Female Education at Johns Hopkins.—The remarks of Dr. Osler at the recent dinner of the Harvard Medical Alumni Association that 33.3 per cent. of the women medical students at the Johns Hopkins Medical School has been married at the end of the first session, has been gravely quoted by the medical press as a failure in co-education. Dr. Osler very properly asks what will happen at the end of the fourth year? The remaining two women in the class stand a poor show of graduating.—*Maryland Medical Journal.*

Gift to a Hospital.—The sons of the late Frederick Billings, of Woodstock, have made the generous gift of $5,000 for the endowment of a free bed in the Mary Hitchcock Memorial Hospital at Hanover. This is in memory of their honored father.

Wanted Doctors in State Hospitals.—The State Civil Service Commission finds great difficulty in securing competitors for places on the medical staff in the various State hospitals. The statutes provide for the appointment at each hospital of a woman physician at a salary of $1,200 per annum, with maintenance. There are also various places on the medical staff of the several hospitals with salaries ranging from $800 to $2,000 per annum, with board. Each hospital also employs an apothecary. Vacancies occur in these places from time to time, and but few candidates appear for the examinations. There is not an eligible list at present from which apothecaries can be appointed, and the commission ordered an open competitive examination of all applicants to be held at its offices in the Capitol, Wednesday, October 3d, at 10 A.M. The salary paid in this place is from thirty dollars to fifty dollars a month, together with board.

The Placarding of "Animal Extracts" on the public bulletin boards of the city will awaken the keenest skepticism as to their real utility.

The Chief Subjects for Discussion at the French Medical Congress to be opened at Lyons on October 25th will be the Etiology of Diabetes, the Clinical Value of the Chemical Examination of the Gastric Contents, and Aphasia. The President of the Congress will be M. Gailleton, Professor in the Medical Faculty of Lyons and Mayor of the city.

Professor Billroth's Widow.—The Emperor of Austria has granted to the widow of the late Professor Billroth a yearly pension of 2,000 florins. This is to be interpreted as a mark of special favor, because according to the law of Austria the pension allowed to widows of professors is only 600 florins. The distinguished surgeon is understood to have left little or no private fortune.

The Quarters for the Board of Health.—On September 29th the City Health Department moved from its old quarters in the building on Mott Street, which it shared with the Police Department for many years, to the new Criminal Court Building on Centre Street, adjoining the Tombs prison. In its new location the Board of Health will have much more ample accommodations than in its former quarters, and the facilities for the proper discharge of its functions will be greatly increased. Fourteen rooms have been assigned for its use on the ground floor of the building, nine on the second floor, and two on one of the other floors.

Unveiling of the Statue of Dr. J. Marion Sims.—It is proposed to unveil the bronze statue to Dr. J. Marion Sims on Saturday, October 20th, at 3 P.M., in Bryant Park, N. Y. Full details of the ceremonies will be given in our next issue.

Dr. Augustin H. Goelet, of this city, has been elected Associate Fellow of the Philadelphia Obstetrical Society.

The Health of the Czar.—Now it is known that the Czar is suffering from contracted kidney. His disease is consequently incurable.

Unveiling of the Sims Statue.—On November 20th, at 3 P.M., it is proposed to unveil the statue of the late Dr. J. Marion Sims, and formally present it to the city. It will be placed on the north side of Bryant Square, where the dark granite pedestal has already been completed. Addresses will be delivered by his Honor the Mayor of New York, Dr. Paul F. Mundé, Dr. George F. Shrady, and others. The profession is cordially invited to attend.

Obituary.

WILLIAM A. M. WAINWRIGHT, M.D.,

HARTFORD, CONN.

William Augustus Muhlenberg Wainwright, of Hartford, Conn., the well known and highly esteemed physician and surgeon, accidentally shot himself while examining a revolver Sunday, September 23, 1894. The ball passed through the body, seriously wounding the liver, mesentery, and small intestine. Conscious to the last and fully appreciating the nature of his injury, he placed himself in the hands of his associate surgeons of the hospital for an operation, which from the first was hopeless excepting to prolong his life. He died about 4 P.M. the following day, twenty-seven hours after the accident.

Dr. Wainwright was born in New York City, August 13, 1844, the youngest child of Bishop Jonathan Mayhew Wainwright. Graduated from Trinity College, Hartford, in 1864, he received his medical degree from the College of Physicians and Surgeons, New York, in 1867, and after two years service in the New York Hospital, settled in Hartford, where he has continued in practice.

A member of his city, county, and State medical societies and the American Medical Association, he was always ready to assist in advancing the interests of his profession. He was President of the Hartford County Medical Association in its centennial year, and delivered an address upon its celebration of that event. At the time of his death he was Visiting Surgeon of the Hartford Hospital, and Medical Visitor of the Retreat for the Insane.

A handsome man of commanding presence, of scrupulous honesty and strict integrity, he was successful in social circles, while his keen perceptions, good judgment, and skilful treatment made him a leader in his profession.

His widow, two daughters, and two sons survive him. The eldest son, now a senior in Trinity College, purposes to follow his father in the profession of medicine.

Society Reports.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

Fourth Annual Meeting, held in New York, September 25, 26, and 27, 1894.

First Day, Tuesday, September 25th.

The meeting was called to order by the President, Dr. W. J. Herdman, of Ann Arbor, Mich., who stated in his address that the function of the Association was to improve and standardize electrical apparatus, to improve electrical nomenclature, and to assist in fixing a uniform standard of electrical measurements. By appointing each year committees, whose duty it was to report on special scientific questions, it had been possible to accomplish a vast deal of systematic work, which must inevitably prove in time of great aid and benefit to the general profession.

Dr. William James Morton, of New York, Chairman of the Committee on Standard Coils, stated as his opinion that an induction apparatus suitable for the needs of any physician would comprise, 1, a standard cell; 2, a primary coil of half an ohm resistance, made of No. 22 wire; 3, a vibrator of the reed type; and 4, a secondary coil of No. 32 wire, about five hundred metres in length. Such a coil would give the two effects required —muscular contraction and sedation.

Dr. A. H. Goelet, of New York, said that an apparatus which would answer the purposes of the neurologist would not be suitable for the gynecologist on account of the much lower resistances encountered in the latter class of work. He therefore believed that to be generally useful a medical induction apparatus should have a combination of coils of wire of different lengths and sizes.

In the discussion which followed, the opinion seemed to prevail that the most suitable apparatus of this kind for the physician would be one having two different coils.

The Committee on Standard Meters presented its report through Dr. Margaret A. Cleaves, of New York. After describing minutely a careful series of tests which had been made with a dozen or more milliampèremeters made by well known manufacturers, the committee recommended that for ordinary use the meter should register up to one hundred milliampères, and should be of the horizontal type. A double scale was desirable on the more costly instruments, and all meters should be re-calibrated once a year. To obtain greater clearness of the scale it was recommended that the meter should read only in one direction. The question of the value to the physician of knowing the energy used, in addition to the rate of flow, had been considered by the committee, and the opinion was expressed that, whereas the wattmeter was a very delicate and expensive instrument, and the voltmeter and ammeter had their individual values, it was better to use them in connection, and establish by an easy mathematical calculation the number of watts used, or fraction of an electrical horse-power in a given treatment. This point had been established by a series of observations made by the chairman of the committee.

Physics and Current Distribution of the Constant Current.—Mr. W. J. Jenks, M.A.I.E E., of New York City, in this paper gave a historical sketch of the methods of distributing the current employed in the various systems of electric lighting, and also the probable distribution of the current when criminals were executed by electricity. Electricity, he said, was not a source of energy, but only an intermediary agent, and the chief point to be considered in its distribution was the one element of pressure. In conclusion, he offered the suggestion that the varying resistances of the human body might eventually be made a means of diagnosis.

Dr. J. H. Kellogg, of Battle Creek, Mich., said that this thought about turning the varying resistances of the body to account in diagnosis had also occurred to him a few years ago, but on attempting to put it in practice he had found such great variations in the thickness of the skin in different individuals, and that such a large proportion of the entire body resistance was due to the skin itself, that he had abandoned the method as impracticable.

The Physiological Effects of the Constant Current.—Professor A. E. Dolbear, of Tuft's College, Boston, then read a paper with this title. He said that in a magnetic field all the molecules were acted upon by a pressure tending to twist them into new positions. Dr. Frederick Peterson, of New York City, and Professor A. E. Kennelly, of Philadelphia, had failed in their interesting experiments with magnets to observe any appreciable effect on the human body, even though the brain were placed in the field of a very powerful magnet. But these experiments did not necessarily prove that such magnets exerted no influence on the human body; in fact, as the brain itself was not a sensitive organ, why should we expect that it would be affected by a powerful magnetic field? The reason these experimenters failed to detect any magnetic effect on the body might have been that the stress was exerted upon the molecules only. A constant pressure producing no muscular movement could hardly be expected to produce a sensation. The author's opinion was that the effect of magnetism was to produce a diminution of sensitivity, and that theoretically the human body might be considered to be a mass of atomic magnets. He would entirely disassociate magnetism and chemical affinity.

The Therapeutic Uses of the Constant Current in Gynecology.—Dr. G. Betton Massey, of Philadelphia, then read a paper on this subject. He believed that the chief and initial lesion in the majority of uterine and peri-uterine diseases was a catarrhal condition, and he found the constant current the best of all remedial agents for the treatment of catarrhal hyperplasias.

Ultimate Results of Conservative Electrical Treatment in Gynecology—Consecutive Pregnancies.—Dr. George Apostoli, of Paris, sent a communication with the above title. The writer stated that the constant current was often an effective substitute for the curette, not only on account of the ease with which the degree and extent of the action could be controlled, but because of its microbicidal power. The electrical treatment of uterine fibroids was purely symptomatic, yet with it hemorrhage could be controlled in ninety per cent., the pain relieved in eighty per cent., and the fibroids reduced in size in seventy per cent. of the cases. Although his patients came to him at an average age of from thirty-five to forty-five years, and often with fibroids, a very considerable proportion had become pregnant subsequent to the electrical treatment. A detailed account of thirty-two such cases was appended to the paper.

The Electro-therapeutics of Diseases of the Eye.—Dr. L. A. W. Alleman, of Brooklyn, N. Y., read a paper in which he detailed the especially favorable results he had obtained from the use of the constant current, 1, in the removal of eyelashes which irritated the eyeball; 2, in granular conjunctivitis; 3, in stricture of the lachrymal duct; 4, in keratitis and opacities of the cornea; and 5, in retinitis diabetica and retinitis pigmentosa.

Dr. M. A. Cleaves added to this list the report of a case of optic atrophy treated by the constant current, with improvement in vision but no changes in the fundus.

Second Day, Wednesday, September 26th.

The Action of Electricity on the Sympathetic.—Dr. A. D. Rockwell, of New York, continued the consideration of the effects obtained from the constant current by presenting a paper on "The Action of Electricity on the Sympathetic." The paper dwelt more particularly

on the results of his experience with electricity in the treatment of exophthalmic goitre and hyperidrosis.

In the course of the discussion Dr. A. Lapthorn Smith, of Montreal, and Dr. F. B. Bishop, of Washington, D. C., cited instances in which the patients show a very strong tendency to syncope during the treatment. Most of the speakers were agreed as to the decided efficacy of the constant current in the treatment of goitre, but Dr. J. J. Putnam, of Boston, did not think it so generally useful in these cases, and expressed the belief that statistics seemed to show that better results were obtained, at least so far as giving prolonged relief from the symptoms, by surgical operation.

Notes on Goitre, and Improvements in the Apparatus for its Treatment was read by Dr. Charles H. Dickson, of Toronto. This communication was supplementary to two or three others on the same subject which had been presented by the writer at previous meetings. In the early stages of simple hypertrophy a current of 100 to 150 milliampères should be given for ten minutes at a time, a clay electrode being applied over the goitre, and a large wire gauze electrode between the shoulders. When puncture is resorted to, one should not be content with a current of less than 50 milliampères applied for eight or ten minutes, and care should be taken to observe antiseptic precautions, and to see that the portion of the needle outside of the capsule is thoroughly insulated. In his experience, the pure cystic goitres had proved to be the most amenable to treatment. His method was to aspirate the contents of the cyst, inject a hot solution of chloride of sodium (one drachm to the ounce), apply through the trocar a current of from 50 to 100 milliampères for ten minutes, and then withdraw the salt solution. It should be remembered that puncture alone involves some risk, and that change of residence and attention to hygiene are important adjuncts to all forms of treatment.

Dr. Robert Newman, of New York, referred to a method of treatment which was employed by Dr. Watkins, of New York City, with good results. A needle was connected with each pole of the battery, and currents of only from one-fourth to one-half a milliampère were found to answer.

Dr. Rockwell objected to the strong currents advised by Dr. Dickson.

Dr. Morton said the object of using these strong currents was to secure adhesion of the cyst walls, but the same object could be attained with a current of only 5 or 10 milliampéres by calling to our aid metallic electrolysis.

Metallic Electrolysis.—This was the subject of a brief communication from M. Gautier, of Paris, and also of a paper by Dr. William James Morton, of New York. The latter detailed some experiments regarding the diffusion into the tissues of the metal dissolved from the electrode. He had found that the apple-green color of the tissues after cupric electrolysis was due to an interstitial deposit of an amorphous insoluble salt of copper, and that there was also a soluble salt of copper deposited in the tissues. His experiments had also shown that soluble electrodes might be used with the negative pole, one of the best metals for such a purpose being aluminum. Among the clinical adaptations of metallic electrolysis might be mentioned its prompt and curative action in trachoma.

Dr. Goelet also made some remarks on the clinical uses of metallic electrolysis, particularly as to the great value of zinc electrolysis in uterine disease. The good effect of the treatment as regards arrest of hemorrhage may not be apparent for some time.

Dr. Holford Walker, of Toronto, emphasized its delayed action in arresting hemorrhage by citing a well-chosen illustrative case.

Dr. O. S. Phelps, of New York, reported a case of long-standing and obstinate mucous cyst of the tongue which he had quickly and permanently cured by cupric electrolysis. He also exhibited some elliptoid electrodes which he had had made of hard rubber covered with copper, thus diminishing their weight, and rendering them more susceptible of delicate manipulation.

The President said that his experience with metallic electrolysis had been in the treatment of inflammations of the mucous membranes, and he thought that its power of reaching into the innermost recesses of the tissues made it particularly valuable in the treatment of gonorrhœa.

Dr. William James Morton, Chairman of the Committee on Standard Electro-static or Influence Machines, reported that the committee recommended that the smallest machines of this class intended for medical work should have at least six revolving disks twenty eight inches in diameter, instead of four disks, as recommended last year. It was considered necessary that the machine should have an enclosing case, and highly desirable that there should be a small separate exciting machine within the case, and also an arrangement for producing the static induced current.

Dr. Lucy Hall-Brown, of Brooklyn, N. Y., then exhibited a stand and universal electrode which she had devised, and which greatly facilitated the giving of static electricity.

Dr. M. A. Cleaves exhibited a form of water rheostat which she had had constructed for the purpose of controlling the static induced current at a distance from the machine.

A Report to Date of the Treatment of Urethral Stricture by the Constant Current was read by Dr. Robert Newman. The report stated that his further experience had only served to confirm his former statements and observations. In some instances the patients had been kept under observation for eleven years. In proof of his claim he submitted statistics and documentary evidence from practitioners in various parts of the country.

The paper was discussed by Dr. Beaver, of Reading; Dr. Frank Ross, of Elmira; Dr. F. B. Bishop, of Washington, D. C.; and Dr. Wallace, of Boston, all of whom spoke highly of this treatment from their personal experience. Several of the speakers contended that equally good, if not better, results were obtained from the use of the ordinary urethral sound as from the bulbous-tipped instrument recommended and used by Dr. Newman. The latter, however, stoutly contested this point, asserting that his instrument allowed of greater delicacy of manipulation, and a more perfect localization of the current at the seat of stricture.

The Behavior of Cancer under Mild Galvanic Currents.—Dr. R. J. Nunn, of Savannah, reported the case of a lady, aged sixty, in whom he had succeeded in greatly reducing the size of the carcinoma of one breast by mild percutaneous applications of the current. She then drifted away into the hands of some faith curers. At the time she left him the tumor measured two by two and a half inches, but on her return to him five months later it measured fully thirteen inches in circumference, and there were secondary deposits in the other breast, and in the pelvic and abdominal viscera. The treatment was resumed, and with benefit, but she eventually died of the disease. His special object in reporting the case was to show the effect of such mild currents in a case in which the diagnosis of cancer was beyond a doubt.

The President also related his experience in the treatment of tumors by electricity. It tended to show that some tumors of the breast, either benign or of doubtful malignancy, might be rapidly dissipated, but that when the diagnosis of malignancy was beyond dispute there was nothing in such treatment which could be considered at all curative.

Hydro electric Methods, Physics and Appliances.—Mr. H. Newman Lawrence, M.I.E.E., of London, read the paper. After speaking of the importance of using well made and carefully installed apparatus, he stated that nothing surpassed the electric douche for

giving the maximum of concentration and localization of the current with the minimum of pain, and expressed the belief that it was particularly suitable for the electrization of the internal cavities of the body. The resistances to the current increased greatly as the temperature of the water decreased. In the dipolar bath only a small proportion of the current passes through the patient.

The Hydro-electric Therapeutics of the Constant Current.—A communication was then read from Dr. W. S. Hedley, of Brighton, England, on this subject. He said that the temperature of the bath should be between 90° and 104° F., and a faradic current should be allowed to flow for a few minutes before the patient leaves the bath. He had obtained his best results with this treatment in rheumatoid arthritis.

Special Hydro-Electric Appliances.—Dr. M. A. Cleaves followed with some remarks on this subject. She described Boudet's excellent method of treating occlusion of the bowel, and exhibited electrodes for making such applications to the bladder, rectum, pelvic tissues, ear, and nose. This was the most important method of employing cataphoresis, and perhaps in no disease was its good effects so apparent as in the treatment of gonorrhœa by hydro-electric applications. With her new water electrode, a description of which appeared very recently in the Medical Record, a douche could be given, and pelvic exudates thus brought more effectually under the influence of the current than by the more usual intra-uterine galvanic treatment. In conclusion, the author detailed some observations she had made, which gave not only the number of watts or electrical horse-power used, but also the number of joules.

Third Day, Thursday, September 27th.

The Effects of High Frequency Discharges.—Professor Elihu Thomson, M.A.I.E.E., of Lynn, Mass., sent a communication on this subject, in which he stated that if a person were subjected to a current of over ten thousand alternations per second, and a voltage of one hundred or two hundred thousand, comparatively little sensation would be experienced, although the heating effect might be sufficient to bring a 110-volt incandescent lamp to full brilliancy. Its comparative harmlessness he had demonstrated to be due not to its physical properties but to physiological peculiarities of the nerves of the human body.

Some Experiments on Death by the Alternating Current.—Professor Edwin Houston read a paper, prepared by Professor A. E. Kennelly and himself, on this subject. The object of the experiments was to refute the startling assertion made by M. D'Arsonval that the criminals condemned to death in the electric chair were not really killed by the electricity, but subsequently by the post-mortem examination. Their experiments seemed to show that at least in the case of dogs, where electrocution was properly carried out, there was not even a remote possibility of subsequent resuscitation, and that death was instantaneous and painless.

The Treatment of Neuritis by the Galvanic Current.—Dr. Landon Carter Gray, of New York, read a paper with this title. He advised waiting three or four weeks if a motor nerve were involved, or if a sensory or a mixed nerve were affected, until the pain had entirely subsided, and then experimentally and very carefully apply a galvanic current of from one quarter to one milliampère. It was important to use a broad electrode above and beneath the affected nerve, and to use a reliable rheostat and milliampèremeter. The discussion seemed to show a general unanimity of opinion regarding the recommendations made in the paper.

Sinusoidal Current.—Dr. J. H. Kellogg, in treating of the "Physiological and Therapeutic Effects of the Sinusoidal Current," stated that with fourteen thousand to sixteen thousand alternations per minute he had observed a decided diminution in the sensibility of the parts to which the current was applied, so much so that in ten minutes the strength of the current could be doubled without producing increased sensation. He considered the faradic current in every way inferior to the sinusoidal current.

Dr. Morton remarked that in actual practice he had found this current particularly useful for treating children, as it did not hurt or frighten them, which could not be said of any faradic current, however skilfully applied.

Dr. Walker was also loud in praise of the sinusoidal current.

Dr. Goelet thought it was not as distinctly tonic as the faradic, or so generally useful.

Dr. Hall Brown described a method which she had devised for controlling and regulating the sinusoidal current as obtained from certain electric lighting circuits. Almost any induction coil would make a suitable transformer for this purpose, but such an apparatus was preferably constructed of one layer of No. 20 wire for the inside coil and ten layers of the same wire for the outside coil.

The following papers were also read, but they were of such a nature as not to admit of being presented in abstract: "Some Landmarks in Electro-therapeutics," by Dr. O. S. Phelps, of New York; "Some Therapeutics of the Incandescent Electric Light," by Dr. J. H. Kellogg, of Battle Creek; "On Constant Current Generators and Controllers," by Dr. W. J. Herdman, of Ann Arbor; "General Faradization," by Dr. A. D. Rockwell, of New York; "Electric Light as a Therapeutic and Diagnostic Agent," by Dr. Margaret A. Cleaves, of New York; "Physics of the Sinusoidal Current," by Professor A. E. Kennelly, of Philadelphia; "Physics of the Static and Static Induced Current," by Professor Edwin Houston, of Philadelphia; "The Transformation, Measurement, and Therapeutic Applications of Alternating Currents," by MM. Gautier and Larat, of Paris; "The Physiological Effects and Therapeutic Uses of the Static Induced Current," by Dr. W. J. Morton, of New York; "The Electric Reaction of Muscles and Nerves after Great Exercise in Sport," by Professor J. Benzonie, of Bordeaux; and "Secondary Peripheral Neuritis in a Stilt-walker," by Professor J. Benzonie and his assistant, H. Bordier, of Bordeaux both of the Faculty of Medicine of Bordeaux.

Dr. A. Lapthorn Smith, of Montreal, was elected President, and Dr. Emil Heuel, of New York City, Secretary for the ensuing year.

Ingenious Plea of a Quack.—A man was recently tried in France for the illegal practice of medicine, the charge being that he sold Matlei's magnetized water. He entered the plea that he employed a remedy which physicians had declared to be nothing but water and entirely innocent of therapeutic effect, and that he could not therefore be accused of practising medicine in the ordinary acceptance of the term. The learned Tribunal admitted the force of the prisoner's plea, and set him at liberty.

The Number of Marriages in England is on the increase, the first quarter of 1894 showing the highest rate of any like period, with but one exception, since 1883. In the first three months of this year there were 93,366 weddings, corresponding to an annual rate of 12.9 per 1,000 of the estimated population. This is not less than 18.3 per cent. above that in the first quarter of 1893, which was 10.9, and the lowest on record. It exceeds the mean rate in the corresponding quarters of the ten years 1884–93 by 9.3 per cent., and is the highest in the first quarter of any year since 1883, except that of 1891, when it was 13.7. The Registrar-General points out that this is the more remarkable, inasmuch as in the last quarter of 1893 the marriage rate had been 6.9 per cent. below the average rate in the December quarter of the previous ten years.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Proceedings of the Twenty second Annual Meeting, held in Montreal, September 25, 26, 27, and 28, 1894.

FIRST DAY, TUESDAY, SEPTEMBER 25TH—MORNING SESSION.

THE PRESIDENT, DR. E. P. LACHAPELLE, OF MONTREAL, IN THE CHAIR.

THE Association met in the Hall of the Y. M. C. A., and was called to order at 10 A.M. by the President.

DR. ROBERT CRAIK, of Montreal, reported on behalf of the Local Committee of Arrangements a very attractive programme. He also announced the social features of the meeting. The Committee had arranged for trips over the Lachine Rapids and down the St. Lawrence to Grosse Isle.

The reading of papers was next proceeded with.

Hygienic Notes made on a Journey through Italy in 1894.—DR. H. F. NUTTALL, of Baltimore, contributed a paper on this subject, which was read by DR. A. L. GIHON, in the absence of the author. This paper described the sanitary conditions, particularly in reference to water-supply and sewage, of Rome, Naples, Venice, and other Italian cities. In Naples poverty and ignorance provided an easy prey to every epidemic until 1884. But after the cholera epidemic of 1884 the Government resolved to spend one million francs for sanitation. New sources of water-supply were secured, new sewers built, and whole blocks of tenements were torn down and replaced by modern houses. The result has been to impart habits of cleanliness to the people and to greatly reduce the death rate.

The Cart before the Horse, by DR. BENJAMIN LEE, of Philadelphia. The object of the paper may be briefly embodied in the two following propositions: 1. Copious water supplies, with the aid of what is known as modern plumbing, constitute a means of distributing fecal pollution over immense areas through the soil, through subterranean water courses, and in surface streams, and cannot therefore be regarded with unmixed approbation by the sanitarian. 2. The question of drainage and sewerage, whether for individual residences or for communities, should always precede that of water supply; and no water-closet should ever be allowed to be constructed until provision has been made for the disposition of its effluent in such a manner that it shall not constitute a nuisance prejudicial to the public health.

Observations upon Sedimentation in Water.—DR. WYATT JOHNSTON, of Montreal, read a paper with this title. The amount of settling which takes place in what is called the settling basin of the Montreal Water-works is too small to be seriously considered. The capacity of the basin being only twenty-three million gallons and the daily consumption about eighteen millions, the water really only passes in and out of the basin. In the reservoir the change in the water is also very rapid, although not to the same degree, for similar causes. However, analysis proves that bacteria are far less numerous in the reservoir water than in the settling basin. The melting of snow in the spring has a tendency to increase the number of bacteria in the reservoir water. As to the value of sedimentation from a hygienic point of view, it is much below that of a sand-filter.

The Long Island Water-basin, Brooklyn's Reservoir, by DR. A. N. BELL, of Brooklyn. After a lucid description of the basin, the author said that while the waste of streams is enormous, it is nevertheless easy to appreciate, from a knowledge of the conditions of the soil and the wells sunk in it, the inexhaustible adequacy of the Long Island water-basin to supply water sufficient to meet the demands of Brooklyn for all time.

The Water of our Farm Homesteads.—DR. FRANK T. SHUTT, of Ottawa, Canada, contributed a paper on this subject. During the past six years the chemical department of the Dominion experimental farms has examined some hundreds of samples of water from wells on Canadian farms, and the fact has been impressed upon the writer that the evil of polluted water is a lamentably common one throughout the country districts, both in the villages and on the farms. The only method the speaker knew for lessening this evil was by instruction and advice, by first emphasizing the great danger that lies in using water polluted with excreta or drainage from filthy sources, and, second, to teach the people that pure water is as much a necessity for the farm animals as for man. Third, farmers must be cautioned against sinking wells in barnyards, stables, or near the pig-pen or privy.

Sand Filtration of Water, with Especial Reference to Recent Results Obtained at Lawrence.—MR. GEORGE W. FULLER, of Lawrence, Mass., followed with a paper with this title. While the removal of pathogenic bacteria by chemicals, including coagulants and by heat, will forever be directly dependent upon human attention, he ventured to predict that the day will come when a knowledge of filtration among sanitary scientists will be such that filters may be constructed and operated by which water free from objectionable bacteria will be supplied to hundreds and thousands of citizens and require the attention of only a mere handful of men. During the five years preceding the use of the filter at Lawrence, the average annual death-rate from typhoid fever in Lawrence was 1.27 per 1,000 inhabitants. The population of Lawrence is 50,000, and this average is equivalent to 63 actual deaths per year. During the past year there have been 26 deaths from typhoid fever, a reduction of sixty per cent. Furthermore, it has been learned that of the 26 who died 12 were operatives in the mills, each of whom was known to have drunk unfiltered and polluted canal water, which is used in the factories at the sinks for washing. In conclusion, it has been found practicable to protect the consumers of infected water-supply by means of sand filtration.

Some Deductions from Bacteriological Work on the Water of Lake Ontario.—This paper was by MR. E. B. SHUTTLEWORTH, of Toronto. It dealt with the normal bacteriological character of Lake water and the depth of water as affecting the number of bacteria, and the author is inclined to think that the number of bacteria is directly influenced by season. He is convinced that in their nature certain micro-organisms multiply most rapidly at certain seasons of the year. He threw out the suggestion that this may have an important bearing in explaining the prevalence of typhoid fever at certain times during the year. This seasonal peculiarity is very well marked in Toronto, when every September shows a sudden increase in the typhoid rate, with a corresponding decline after October. Since May last he had been paying attention to the temperature of tap-water, which seems to be related to the development of this disease. He hoped in the future to throw some light on this subject, as the experiments of numerous investigators had shown that it is possible for micro organisms to exist and multiply enormously in distilled water, or, at all events, containing only the minutest traces of organic matter.

AFTERNOON SESSION.

The Pollution of Water-supplies.—DR. CHARLES SMART, of Washington, D.C., Chairman, read the report of the Committee on the Pollution of Water-supplies. The report reviews at length the influence which a polluted water-supply may have had in the recent cholera epidemic in Europe, and upon the spread of typhoid fever on both continents. The efforts to purify water by sand filtration were also reviewed, wherever made, and the report concludes: "From this brief review of facts and opinions concerning filtration, it will be seen that your committee hesitates to reaffirm its former positive language with regard to the sufficiency of filtration as protection against typhoid fever. Nor, on the other hand, do we regard the testimony as authorizing a formal declaration of opinion in favor of the efficiency

of filtration. Our experience in this country is extremely limited, but it is hoped that the success achieved at Lawrence will lead to the filtration of other surface waters, each of which will probably teach an important lesson in connection with bacteriological experiments and with the mortality from typhoid fever before and after the construction of the filter beds. In view of an unbroken record of typhoid fever in communities that use raw river-water, and an equally unbroken record of lessened typhoid rates following the filtration of such river supplies, your committee considers that in Washington, D.C., special attention should have been given to the improvement of the general supply. This country needs some practical lessons in methods of water purification."

At the conclusion of the report Dr. Gardner, of London, Ontario, offered the following resolution:

Resolved, That in view of the danger to the public health by the sewage contamination of our fresh-water lakes, rivers, and streams, this Association memorialize the different Federal Governments, as well as the State and Provincial Governments, to pass laws prohibiting the contamination of these water-supplies by sewage from cities, towns, and villages, and compel them to provide some means for the treatment and oxidation of this sewage before emptying it into these places.

The resolution was referred to the Executive Committee and subsequently adopted by the Association.

Management of Diphtheria Epidemics in Rural Districts, by Dr. Charles A. Hodgetts, of Toronto. The medical officer must exercise a personal supervision not only over his patients but personally superintend the carrying out of all orders, for upon the thoroughness of the work depends to a very large extent the prevention of further outbreaks in the district. He felt the inhabitants of the rural districts should receive more attention from the sanitary authorities than they had heretofore, and some inexpensive system should be adopted for the more efficient and prompt management of epidemics in those portions of our country. Schools should be closed in the district until such time as the inspector has satisfied himself in the manner indicated that the household of the individual scholars thereof are free from diphtheria.

Practical Difficulties of Medical Health Officers and Physicians in Dealing with Suspected Cases of Diphtheria was the title of a paper read by Dr. Peter H. Bryce, of Toronto. With every advance in our knowledge we find that the practical benefits are often limited by unforeseen difficulties, and that bacteriological results bring into prominence the difficulties which the health officer finds in dealing with cases of sore throat, and which may be summed up as follows: 1. That according to recent investigations made, at least twenty-five per cent. of diphtheria cases are not caused by the Loeffler bacillus. 2. That physicians endeavor to hide cases in the supposed interest of the client, and conveniently shield themselves behind the assertion that they could not tell whether the disease was diphtheria or not. The author drew special attention to the difficulty of differentiating between cases of ordinary sore throat and real diphtheria. It was impossible often to decide that cases were really diphtheria without microscopic examination.

Dr. J. Ed. Laberge, of Montreal, read a paper in French, entitled "Vaccination as a Preventive of Contagious Diseases." The paper was historical, it being largely a review of Pasteur's experiments.

Innocuous Transportation of the Dead.—This paper was read by Dr. J. D. Griffith, of Kansas City, Mo. The author said that the age demands a far greater protection to the public health. He was convinced that we owe to the travelling public that greater precautions should be taken in the transportation of the dead body. He cited as evidence of the virulence of a dead body that in a Normandy village, twenty-three years after an epidemic of diphtheria, some of the bodies of those who died of the disease were exhumed and an epidemic at once broke out, first among those who opened the grave, and then spread from those to many others. Other examples were cited. Until the public are educated to the point of the thorough sanitation of cremation, the transportation of dead bodies by the railways is, and always will be, a source of very great danger. The speaker urged that the attention of the different legislative bodies of the country be directed by the Association to a subject of such vital importance. He urged, furthermore, that all railways cut off a small portion of their baggage cars for the transportation of dead bodies. The dead body should be placed in a box lined with zinc, with a door very much after the fashion of a large ice chest. This done, the lives of employees would not be endangered; no broken or open box could become infected, and no odor could escape from the car.

Evening Session.

At this session addresses of welcome were delivered by Dr. Robert Craik, the Lieutenant-Governor of the Province of Quebec (Hon. J. A. Chapleau), the Mayor of Montreal, Hon. L. P. Pelletier, Provincial Secretary, and Doctor Gregario Mendizabal, of Mexico, after which the President of the Association delivered his annual address.

The President's Address.—He said the American Public Health Association, since its foundation, now twenty-two years ago, has never ceased to labor for the advancement of sanitary science; for the promotion of measures and organizations that should effect the practical accomplishment of the laws and principles of public hygiene. It has thus realized the brightest hopes and most enthusiastic provisions of its worthy founders, and has extended its benefits and influence over the whole of North America. To-day it embraces the three great countries that form this vast continent—the United States of America, the Republic of Mexico, and the Dominion of Canada—all three working together in brotherly emulation, recognizing no political boundaries, and striving to attain one unique and humane object—the dissemination of all of the knowledge of public hygiene and the development of respect for its decrees. Every year the Association changes its place of meeting, and this for good reasons. The spirit of its founders being to establish a body for the diffusion and popularization of public sanitary science, this object could not be better attained than by extending to its greatest limits the influence of the Association; and for this purpose no surer means could be found than the bringing together of its distinguished members.

President Lachapelle in closing urged the creation by the Government of a new department in their cabinets—that of Public Health.

Second Day, Wednesday, September 26th—Morning Session.

The Executive Committee recommended, which was endorsed by the Association, a new committee, to consist of five persons, entitled "Steamship and Steamboat Sanitation."

Dr. E. Gauvreau, of Ste. Foye, Quebec, described in a paper the process followed in his institution—the Vaccine Institute of Ste. Foye—for the culture and collection of vaccine lymph, showing that every care is taken to insure absolute safety to the public using the points.

Restriction and Prevention of Tuberculosis, by Dr. N. E. Wordin, of Bridgeport, Conn. He showed that consumption was an infectious or communicable disease and that the principal source of danger of its spreading lay in the sputum ejected by a phthisical patient when it had become dry. The breath of a consumptive contained no bacilli, and was not infectious. If the spread of this disease was to be prevented the sputum must be attacked. Phthisis might be communicated by osculation, and

among the hygienic commandments should be one for the syphilitic and the consumptive, "Thou shalt not kiss." He considered that the most practical and the quickest way of restricting the spread of tuberculosis would be to put it on the list of infectious or communicable diseases to be reported to the health officers.

Examination of the Milk-supply for Tuberculosis in the State of New York, by DR. F. O. DONAHUE, of New York City.—He said that in May, 1892, New York State took a step forward in authorizing its Board of Health to make investigations in reference to the existence of tuberculosis in cattle. The relation of the milk-supply to infant mortality from tuberculosis was insisted upon by all health officers who had made it the subject of systematic observation. That milk and its product will convey tuberculosis had been proven. When it is considered that milk is the principal aliment during childhood, and enters largely into the diet of all classes, it was a highly important question for consideration. Statistics of New York State show that for a period of eight years last past, every eighth death was caused by tuberculosis. The State Board of Health evolved the lesson that tuberculosis existed in the dairy cattle to quite an extent, and that special legislation was necessary to deal with it. It is confidently expected that future legislation in this regard will be enacted carrying with it an appropriation commensurate with the magnitude of the work.

Should the Marriage of Consumptives be Discouraged?—DR. PAUL PAQUIN, of Missouri, followed with a paper on this subject. He held that the marriage of a consumptive with a healthy person must lead to the infection of the latter, and that the children born of consumptives are always naturally predisposed to tuberculosis. Thus the centres of infection are increased and the danger to society is made much greater. No consumptive should marry, and it is perfectly proper for science to interfere and use all its influence to prevent such marriages.

The Climatic Segregation of Consumptives.—DR. HENRY SEWALL, of Denver, read a paper on this subject. He proposed the following plan for the treatment of consumption in its early stages, viz., he would establish at favorable points in Colorado a series of cottage sanatoria. The cottage plan was eminently the best in its adaptation to the character of the climate, the people, and the disease. The efficiency and feasibility of such an institution had already been established in the Adirondack Cottage Sanatorium of New York, which might well serve as a model for extensive development. These sanatoria should be located with careful regard to climatological conditions, purity of water supply, beauty of scenery, and accessibility to railways.

DR. JOHN T. NAGLE, of New York City, in some remarks upon diphtheria, said that the Health Department of New York City had been making strenuous efforts to stamp out diphtheria, and with this end it has instructed the bacteriological division to examine gratuitously the cultures furnished it by physicians who attend suspected cases of diphtheria. He said that Dr. Cyrus Edson has great faith in the antitoxine treatment of diphtheria, and it promises to be one of the most important discoveries of modern medicine, and, so far as could be judged from the data at hand, will afford us a means of not only protecting persons from diphtheria who have been exposed to the disease, but also a certain means for the cure of the disease when cases are subjected to this treatment in the early stages. One of the most important and significant features of the treatment depends upon the absolutely innocuous character of the remedy, it having apparently no influence, either favorable or unfavorable, in health or disease, excepting as to its power of neutralizing the poison of diphtheria.

The afternoon was devoted to pleasure, the members of the Association, many of whom were accompanied by their wives and daughters, taking in the trip which had been arranged down the Lachine Rapids.

EVENING SESSION.

DR. F. MONTIZAMBERT, General Superintendent of the Canadian Quarantine, gave an interesting sketch, illustrated by lantern slides, of the quarantine appliances at Grosse Isle. He briefly explained the mode of boarding ocean ships, the examination, disinfection, and hospital treatment.

Some Points in the Hygiene of the Young in Schools.—This paper was read by DR. J. C. CAMERON, of Montreal. He pointed out that mind and body were dependent upon each other, and consequently for the proper development of the individual the body was to be considered and cared for as well as the mind. He referred to the fact that the physical culture of school children was in too many cases improperly cared for, though in the case of boys, who engaged in out-door sports, the effects were not so marked as in girls, who indulged less in out door sports and were inclined to be more sedentary. Spinal curvature and pelvic deformity were liable to result from assuming an improper attitude when sitting, standing, or walking, and consequently it was of the utmost importance that school children should be taught to sit, stand, and walk properly.

Sanitation in Plumbing.—By MR. JOHN MITCHELL, President of the National Association of Master Plumbers, New York. The speaker advocated a semi-annual inspection of all houses for sanitary measures. The rule that at present appears to be observed, he said, is to wait for crape on the door before asking a question regarding the sanitary arrangements.

Influence of Inebriety on Public Health.—This paper was read by DR. T. D. CROTHERS, of Hartford, Conn. The facts he wished to make prominent were:

1. The influence of inebriety on public health is of far greater magnitude and more closely associated with the various sanitary problems of the day than is realized at present.

2. Our present conception of the extent, nature, and character of inebriety is erroneous and based on theories that are wrong. Our methods of dealing with inebriates are most disastrous and fatal in not only destroying the victim, but perpetuating the evil we seek to lessen.

3. These cases must be recognized as diseased, and be housed in farm colonies, under military care and treatment. They must be organized, employed, and placed under hygienic surroundings and made self supporting.

4. The present duty is careful medical study of these classes and full recognition of their needs and requirements. Public sentiment should be built up to sustain rational means and measures in their treatment.

5. The sanitary problems that confront our civilization are very closely associated with the inebriate class. One of the central sources of peril to public health is inebriety. This is the one fountain-head that must be corrected to break up some of the evils of the present day.

THIRD DAY, THURSDAY, SEPTEMBER 27TH—MORNING SESSION.

A Journal of the American Public Health Association.—SECRETARY WATSON read a short paper with this title. He urged establishing a quarterly journal in connection with the Association, to replace the annual volume of Transactions. He expressed the belief that the establishment of such a journal would increase the influence and strength of the Association. The matter was referred to the Advisory Council.

Vaccine and Vaccination.—DR RALPH WALSH, of Washington, D. C., read the paper. He summarized as follows: So-called cow pox is simply modified variola. The admixture of glycerine with vaccine lymph will destroy all extraneous bacteria without injury to its peculiar active principles. The admixture of glycerine with vaccine lymph not only does this, but prolongs the activity of the lymph. The selection of lymph and the simple but important operation of vaccination had not

received from the profession the attention they deserved. The physician should see that each infant brought under his care is successfully vaccinated during the first year of its life, and again at sixteen, or better, to the point of saturation during infancy. The accumulation of unvaccinated material, and consequently the increased danger of outbreaks of small pox, are caused by the general practitioner failing to perform his duty at the proper time.

Car Sanitation.—Dr. G. P. Conn, of Concord, N. H. read the Report of the Committee on Car Sanitation, of which he is chairman. The report maintained that the railway companies are very negligent in this respect. The railway car is virtually and for the time being a house on wheels, in which a varying number of people are expected to make their homes for a longer or shorter period, according to the distance which they may be expected to travel. Therefore, like a house, it should be constructed upon sanitary principles, in which ventilation, heating, and such conditions as will allow it to be kept clean are paramount factors in every case. Unless these sanitary principles can be carried out and made permanent, then this house on wheels becomes unwholesome and unhealthy, and the conditions become favorable to disease, or of spreading it should a contagious or infectious malady find a place within its walls. According to investigations it had been found that the atmosphere of the ordinary coach contained from one to six times as much carbonic acid gas as public assembly rooms, such as churches, theatres, and public halls.

Prevention of the Spread of Yellow Fever.—Dr. Felix Formento, of New Orleans, read the Report of the International Committee on the Prevention of the Spread of Yellow Fever. The report maintained that this plague never originated in Louisiana, but is imported from Cuba, Mexico, and Central and South America. It recommended attempts to stamp out the disease in the swamps in those countries, and the adoption of thorough sanitary measures in the Southern centres, where the disease is wont to become epidemic. An effort to secure the co operation of the governments of Cuba, Mexico, Brazil, and the Central American republics was recommended.

Dr. N. E. Worden, of Bridgeport, read a paper on "Disposal of Garbage," in which he advocated its destruction in an incinerator.

The Disposal of Garbage and Refuse.—The Report of the Committee on the Disposal of Garbage and Refuse was presented by Mr. Rudolph Hering, C.E., of New York City. It dealt with the character of city refuse, its collection and removal from a building to the place of disposal, and the several methods in vogue for its disposal.

Colonel W. F. Morse, of New York, dealt briefly with the collection and disposal of the refuse and garbage of large cities, describing what was being done in New York in order to find out the best method of disposing of its refuse and garbage.

Influence of the Climate of Canada on Health.—This was the title of a paper read by Dr. W. H. Hingston, of Montreal. He touched briefly on the geographical situation and the topography of the country, and then went on to show that after a residence in the country, of shorter or longer duration, a change in the constitution could be observed. The high color which flushed the cheeks of some Europeans faded somewhat, and the skin became less soft, the hair became darker and more like the aboriginal type, and the muscles were less prominent. The hot weather did not last long enough to produce any great disturbance of the liver, and the cold was exhilarating. The ratio of mortality in Canada was lower than that of Great Britain, and, with the exception of Malta, this country was the healthiest station of the British army. Statistics gathered from the States showed that all constitutions were healthier as they approached the Great Northern Lakes.

Afternoon Session.

"The Advisability of Teaching Rules and Principles of Hygiene in the Primary Schools by Means of Object Lessons," was the title of a paper read by Dr. Jesus E. Monjaras, of San Luis Potosi, Mexico.

The Importance of Teaching Hygiene in Elementary Schools.—Dr. S. Gauthier, of Upton, Quebec, followed with a paper on this subject. The speaker held that it was through the teaching of hygiene to the school children that we could eradicate the unfortunate prejudices which directly caused the loss of so many who might have been the strength, glory, and pride of our country.

The Hygiene of Vision in Schools.—Dr. T. D. Reed, of Montreal, recommended the introduction into schools of the suggestions of the Anthropometric Committee of the British Association for the Advancement of Science, in order to test the power of vision and color-sense. He also recommended exercises for the development of the power of rapid and accurate observation.

A Few Remarks on School Hygiene, by Dr. T. M. Brennan, of Montreal. The points in this paper might be summarized as follows: The rousing of the general public to the necessity of propagating the study of hygiene; the hygienic education of children, whose teachers must be proficient in hygiene. In each school there should be a school commission endowed with power to act. There should be some system of efficient general supervision, and the general co-operative support of local and general Boards of Health and the Board of Public Instruction should be assured.

An Epidemic of One Hundred and Twenty Cases of Paralysis in Children.—Dr. Andrew Macphail, of Montreal, contributed a paper on this subject. The paper contained an account of an epidemic of infantile paralysis which occurred in the State of Vermont during July, August, and September, and which the speaker investigated. He first stated that the belief was held that it was an outbreak of cerebro spinal meningitis, but he showed in a lucid manner that it was a true myelitis. He quoted the notes of 91 cases out of the 120. In some children the paralysis came on without any symptoms, in others there was a preliminary illness of a few days resembling indigestion. He described in detail the fatal cases, of which there were 18, and 42 in which there was permanent paralysis. There were also notes of 6 cases in adults, 3 of which ended fatally. He then referred to the origin of the malady, giving full statistics of temperature, rainfall, and humidity, and geological factors. There were, besides, 12 deaths from the same cause among horses, and fowls were likewise affected. In conclusion, he dwelt upon the necessity for having in every State a properly conducted laboratory and a competent staff to deal with such outbreaks, and a Board of Health with authority to investigate epidemics and perform autopsies. The paper had additional interest from the fact that it is the first epidemic of the kind reported in America, and the third which has occurred in any country. The speaker refrained from expressing any views or propounding any theories till the pathological work which he has in hand shall have been completed.

The Advances of Public Health in the City of Montreal was the subject of a paper by Dr. L. Laberge, Medical Officer of Health for Montreal. The author outlined the development of the several matters connected with the public health of the city and the legislation by which they were governed, such as milk inspection, meat-supply, ice-supply, drainage, and public baths. He gave an account of the present state of sanitation in the city, and concluded by showing that during the last twenty years the death-rate had been reduced by 12.87 per thousand.

Myopia in its Relation to School Hygiene.—Dr. A. A. Foucher, of Montreal, presented a chart which illustrated that myopia is more prevalent in the secondary than in the primary schools. In the primary schools of Russia it is fourteen per cent., while in those of Ger-

many, Austria, France, Holland, New Zealand, the United States, and Switzerland it is thirteen per cent.; Norway, eleven per cent.; England, Roumania, and Belgium, thirteen per cent. In the secondary schools in Austria it is thirty eight per cent.; Switzerland, thirty-six per cent.; Germany, thirty-six per cent.; France, thirty-six per cent.; Russia, thirty six per cent.; Denmark, thirty-six per cent. In Italy it is thirty-eight per cent.; Sweden, thirty-four, and in England, thirty-eight.

Dr. G. Mendizabal, of Orizaba, Mex., gave some "Observations on Yellow Fever in Vera Cruz, and its Prevention," and he was followed by Dr. J. I. Desroches, editor of the *Journal d'Hygiene Populaire*, and member of the Board of Health of the Province of Quebec, who discoursed on hygiene in medical education.

Nomenclature of Diseases and Forms of Statistics.—The day's session closed with the reading of the report of the Committee on Nomenclature of Diseases and Forms of Statistics, by Dr. S. W. Abbott, of Boston, chairman. The committee considered changes in the nomenclature and classification of diseases and causes of death; uniform methods of reporting vital statistics; uniform methods of estimating population and death-rates, and the adoption of a standard of age distribution. It is quite plain that a fair comparison cannot be made of the death-rates of countries, cities, and towns in which the age distribution is widely different; hence the importance of adopting some conventional standard to which all populations may be referred, or with which they may be compared.

Fourth Day, Friday, September 28th — Morning Session.

A Plea for Vaccination.—Dr. M. T. Brennan, of Montreal, Can., said vaccination should be performed with all the precautions calculated to insure the action of the pure lymph, free from all contamination and the action of it. Each vaccinator should be provided with —1, pure lymph of a standard strength, if possible; 2, a vial of distilled or boiled water to dilute the lymph; 3, a vial containing a solution of bichloride of mercury; 4, a small alcohol lamp to sterilize the lancet, etc.; 5, Some sterilized absorbent cotton; and 6, some sterilized gauze. All these take up but a small space, and may be placed in a small satchel or metallic case. The operation should be done under strict antiseptic precautions; all instruments, dressings, hands of the operator, etc., should be clean.

Infection by the Bacillus Pyocyaneus as a Cause of Infant Mortality.—Dr. H. Cameron, of Montreal, read a paper on this subject. It was not until 1889 that this bacillus was found to produce definite general infection in young children. The author drew the following conclusions: 1. That the infant tissues are susceptible to the invasion of this bacillus. 2. That the bacillus is distinctly pathogenic, setting up a disease peculiar to experimental pyocyanic disease. 3. That this disease is characterized by a train of very definite symptoms, such as diarrhœa, fever, rapid emaciation, rigidity of the legs, and hemorrhagic and bullous eruptions. 4. That the disease appears to be very fatal.

As this combination of symptoms occurs not infrequently in young children, especially when congregated in nurseries and foundling asylums, the author ventured to infer that a certain proportion of the deaths which now appear upon our records of vital statistics under the headings of gastro enteritis, purpura, or marasmus, were in reality cases of generalized pyocyanic disease.

As to prophylaxis he had nothing definite to offer at present beyond a strict observance of the laws of hygiene, fresh air, suitable nourishment, and cleanliness; but he is inclined to consider that this disease is one eminently suited for a trial of "serum therapeutics." It is a disease in which, experimentally, immunity can be easily produced in susceptible animals. This being so, it is probable that the serum of animals vaccinated against this disease, or substances obtained from such serum, will be found, as in the case of diphtheria, to have curative effects.

The closing paper of the Convention was read by Mr. J. W. Hughes, of Montreal. It was entitled "Evolutionary Developments of Domestic Plumbing during the Past Twenty-five Years."

Several papers were read by title, owing to the absence of the authors.

The following resolutions were offered by C. O. Probst, of Columbus, O., referred to the Executive Committee, and adopted by the Association:

Resolved, That this Association approves the suggestion for a co-operative investigation into the bacteriology of water, and commends the efforts of the committee, in carrying out this work, to the officers of State and Municipal Boards of Health, to the individual members of this Association, and to all persons interested in the purity of water-supplies for such special assistance as they may be able to render.

By Dr. E. R. Campbell, of Bellows Falls, Vt.:

Resolved, That this Association records its protest against the use of alcoholic liquor as a beverage, especially among the young, believing that such use is attended with great danger to the health, the individual, and society.

The Executive Committee failed to act on this resolution.

By Dr. George Homan, of St. Louis:

Whereas, It is the sense of this Association that the pollution of potable waters in America has reached such a point that the national governments should be asked to take cognizance of the matter with the view of devising means of prevention and relief; therefore be it

Resolved, That this Association memorialize the Congress of the United States and ask that they shall authorize the appointment of a competent commission, clothed with power to fully investigate the whole subject of the pollution of rivers and lakes by municipal and manufacturing waste, and provided with sufficient means to enable them to conduct the examination in such a manner as shall be deemed best, the results of said examination to be published from time to time for the public information.

The following officers were elected for the ensuing year: *President*, Dr William Bailey, of Louisville, Ky.; *First Vice President*, Dr. G. P. Conn, of Concord, N. H.; *Second Vice-President*, Dr. G. Mendizabal, of Orizaba, Mexico; *Secretary*, Dr. Irving A. Watson, of Concord, N. H.; *Treasurer*, Dr. Henry D. Holton, of Brattleboro', Vt.

After a resolution of thanks, offered by Dr. A. L. Gihon, of Washington, D. C., the Association adjourned to meet in Denver, Col., at a time to be fixed by the Executive Committee.

Menthol in Itching Affections of the Skin.—Dr. Colombini strongly advocates this drug in cases of eczema of the scrotum, vulva, etc. He uses the following formulæ:

℞. Menthol ..... 5 to 10 parts.
Alcohol ..... 100 parts.

Or,

℞. Menthol ..... 10 parts.
Oil of sweet almonds ..... 10 parts.

Or,

℞. Oxide of zinc ..... 25 parts.
Starch powder ..... 25 parts.
Vaseline ..... 50 parts.
Menthol, from ..... 5 to 8 parts.

Or,

℞. Oxide of zinc ..... 10 parts.
Subnitrate of bismuth ..... 10 parts.
Menthol ..... 1 to 30 parts.
Starch powder ..... 1 to 30 parts.

When the application is to mucous surfaces the mixture should contain a smaller proportion of menthol.—*La France Médicale.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

DR. THORNE THORNE, C.B.—APPRECIATION OF MEDICAL WORK FOR THE STATE—THE DUKE AND THE ARMY DOCTORS—CHOLERA—REPORT OF LOCAL GOVERNMENT BOARD'S MEDICAL DEPARTMENT.

London, September 22, 1894.

Dr. Thorne Thorne, C.B , has received from the Queen an intimation of Her Majesty's appreciation of the services rendered by the Medical Department of the Local Government Board in the measures taken to prevent an invasion of cholera. It is reported that the Queen has all along manifested particular interest in the efforts to prevent an epidemic, and this expression of appreciation of the work done will no doubt be gratifying to the principal medical officers. To the profession it might have appeared more satisfactory had the opportunity been taken to give a step in the Order of the Bath. There is always considerable reluctance to convert a C.B. into a K.C.B., especially in the case of medical holders of the dignity. Perhaps this also is due to the absurd jealousy of "military advisers," a jealousy which continues to work untold injustice. No one doubts that the Duke of Cambridge has greatly injured the army medical officers by his silly jealousy of the non combatants, but he has lately had a lesson on the drift of public opinion he would do well to take to heart. He has been pushed into good things because of his birth, not because of his knowledge or skill—the Crimea proved that—and he should have some regard for those who make their way by skill and knowledge only. If he continues to persecute non-combatants (*e.g.*, the case of Dr. Briggs) the day of reckoning may be nearer than he imagines.

To return to cholera. The disease has in some parts of Europe been more severe this year than last, and the danger which has threatened England has been greater, too, as it has manifested a disposition to spread in different directions. In Russia and Galicia it has been more fatal, and still prevails. The returns from St. Petersburg, indeed, indicate that the epidemic is dying out in that city, but in many of the provinces of Russia it is unabated, and others are being invaded. The Prussian frontier has been closed against Russia in all dangerous directions, but not much is to be anticipated from the old-fashioned methods in vogue.

What England has done to repel invasion is chronicled in the report of Dr. Thorne, which I have previously noticed. In that report it is shown that the inspection of our ports has been useful in stimulating the control of vessels arriving from infected ports. In 1892 this method was perfectly successful, save in the cases of thirty-five persons who landed during the period of incubation or when the disease had set in. Last year some cases occurred, as I reported to you at the time, in persons who passed inland, and we were face to face with the serious danger of an outbreak in several places at once. Now that that peril is past it is satisfactory to know that, besides the ports, these inland districts have been carefully watched, and, moreover, that inspection of other places exhibiting sanitary defects is being continued. The report contains some shocking examples of neglect and recklessness on the part of some local sanitary authorities, which deserve severe blame, and it is certainly to be hoped that the danger incurred will be brought home to all concerned. Dr. Thorne remarks that it is no part of his duty in such cases "to appraise the responsibility attaching respectively to electors or elected," and he evidently thinks that great blame is due to one, or probably both. It is, perhaps, a blot on our institutions that the densest ignorance does not disqualify an elector, or, for that matter, an elected person, and the representatives of ignorance are likely to be reckless administrators in sanitary matters. It is, indeed, a relief that the inspection of the Local Government Board is a reality, and that its medical department is presided over by so capable an officer as Dr. Thorne Thorne. The system of sanitary supervision he directs may claim success so far, but no doubt many details require perfecting, and it is to be hoped that the suspicious villages and towns will continue under observation as well as the ports which are specially exposed to danger. For we are not out of the wood even in regard to the present year, though some papers are already singing pæans at our escape; and not merely this year, but always and continuously, those precautions which have proved effectual must be maintained. Even those who still hold to quarantine have accorded us the approval of our methods which its success necessarily extorted.

MUST THE PARSON PAY?

To the Editor of the Medical Record.

Sir: With your permission I would like to ask Minister, whose letter appears in your issue of June 9th, a few questions.

Is it not a fact that laboring men and clerks who receive a salary of forty dollars per month (some less), pay their medical bills without a murmur?

Is it not also a fact that the vast majority of physicians do a great amount of work for which they receive not a penny, in some instances even furnishing the medicine?

Who has the harder and more responsible duty to perform—the minister who prepares his sermon during the week to recite on Sunday, and who visits the members of his flock on pleasant sunshiny days; or the doctor who has to answer calls at all hours of the day or night, no matter how tired and sleepy he may be, no matter how much snow, ice, or mud he may have to plod through, and who, when he reaches the bedside, instead of repeating a prayer which he has learned by heart, has to call into play all the resources of his medical knowledge, and upon whom devolves the responsibility of restoring the child to its mother, or the father to his family?

And last of all, what do ministers do to merit medical attention gratis? Truly I cannot understand it; and while I would never hesitate to answer a call of charity at any time, I fully concur with my friend of Durham, N. C., that when one is able to pay one should pay, whether he be minister, lawyer, or laborer.

Yours very truly,
C. H. Carroll.

Pavaris, Fla.

SOME PRACTICAL OBSERVATIONS ON MALARIA NOT DUE TO DRINKING WELL- OR SURFACE-WATER.

To the Editor of the Medical Record.

Sir: The article on malaria, by Dr. W. H. Daly, of Pittsburg, Pa., which appeared in the Medical Record of September 15th, was especially interesting to me, living in a malarial district (Twenty fourth Ward, New York City). According to his observations, malaria is due almost, if not exclusively, to drinking water contaminated by the germs to which the disease is attributed. That the mist, fog, etc., rising from marshy ground; the turning over of earth, incidental to filling in and raising the grade of roads, are incapable of causing the disease; and that no matter what may be the condition of the soil and drainage, providing we do not drink water containing the germs, we will not contract the disease.

While I agree with Dr. Daly that surface water and that from contaminated wells are one of the prime factors in causing the disease, I am compelled to differ with him as to their being the distinct cause.

If he be correct in his deductions, how can the following cases be accounted for?

Some two or three months ago, for the purpose of building sewers in my immediate neighborhood, the city authorities have been filling in and raising the grade of

one part of the road with earth obtained by lowering it at other points. This work had not been going on very long before I began receiving patients suffering from pronounced chills and fever. During the months of August and September (to date, the 22d inst., an unusually dry spell), I treated twenty-three cases of chills and fever, and nine cases with all the symptoms of malarial poison excepting the chill.

Now, let us see what influence well- or surface water had with their sickness. Close investigation resulted as follows: Of the 23 cases where all the symptoms existed, but 3 had drank water from wells, 2 from cisterns, and the remaining 18 from the regular supply furnished through the Croton Water Department pipes. Of the 9 cases where the chills were absent, only 1 case used well-water, and the balance used Croton.

Furthermore, some of my patients came from families consisting of from five to eight members, and in the majority of these cases they were the only members suffering from the disease, notwithstanding the fact that the entire family were using the same water-supply, and living, as far as I could ascertain, under identical circumstances.

Admitting Dr. Daly's water theory, how did the cases using the Croton water-supply contract the disease?

Admitting for the sake of argument that the Croton water-supply for this district may have been contaminated by malarial germs, how is it that the entire neighborhood is not suffering, as we all use the same water supply?

As to the drinking of contaminated water being one of the prime factors, I can offer proof positive in the person of myself. Some eight years ago, the house in which I then resided had for its water-supply a cistern and a well. After using this well-water for drinking purposes for a few months, I suffered from a very severe attack of chills and fever. Upon investigation I found the well was receiving the leakage from an out house as well as the surface drainage. Upon discontinuing its use all symptoms disappeared.

In conclusion, while admitting the water-supply to be a pronounced factor in causing malaria, it is not the distinct or exclusive cause. On the contrary, my observations point toward the mist, fog, etc., rising from swampy, marshy ground, stagnant water, decaying of rank vegetation, and the turning over of great quantities of fresh earth.

Further data upon this subject would be both interesting and instructive.

JOSEPH S. HEALEY, M.D.

KINGS BRIDGE, NEW YORK CITY, September 22, 1894.

IS BATHERS' CRAMP A POPULAR FALLACY?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: It was with great interest that I read the article entitled "Bathers' Cramp, is it a Popular Fallacy" in the MEDICAL RECORD of September 1st, and I should like to add my small contribution to the much that has been already said upon this subject. I have suffered from cramp not only in the cold waters north of Cape Cod, but also in the warmer waters south of it. Now the case quoted does not seem to me to be one of genuine cramp, for if the attack is severe it is quite impossible to move the members affected, even in a "dazed or mechanical way." I have had cramp at times in one and both legs, and in one or both ankles. When attacked in one leg it was in warm river water, and to get ashore was a comparatively easy matter. When attacked in both legs, it was in the warm waters of New Bedford Harbor (Mass) and it was with great difficulty that I reached shore by swimming on my back, both legs doubled up under me, and dragging myself up on the beach with my hands.

This attack was very painful, the muscles of the legs tightly contracted, violent pains in the head, and nausea. Slight relief was experienced on the instant of dragging the leg from the water, but the pain ceased only upon prolonged and vigorous massage. Cessation of local pain was followed by general debility, exhaustion, severe headaches, muscular fatigue, and slight nausea for two days.

I am absolutely certain that the liability to cramp is increased by tight garters worn either above or below the knee, tight shoes, or other obstructions to natural circulation. I have investigated several other cases, have dragged one person so affected out of the water, and in all there is a tendency to double up the legs, drop the head forward and bend the arms (as in the attitude of writing)—most favorable conditions to a death by drowning. I believe the tight garter to be the cause of many such deaths and would most strongly caution all those who swim or bathe, against it. Hoping that these brief observations and remedies, which have certainly been efficient in several cases of which I have had the treatment, may be of interest and assistance to many others.

W. LOUIS CHAPMAN.

LYNN, MASS.

PERMANGANATE OF POTASSIUM IN OPIUM POISONING.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Although it is not a pleasant task to harshly criticise a confrère, yet I do not see how I could refrain from applying the epithet illogical to the report by Dr. McGuire of a case of morphine poisoning published in the MEDICAL RECORD of September 15, 1894. According to Dr. McGuire's statement, he came near losing his patient by "relying" on potassium permanganate. A brief analysis of the doctor's report will show the astonishing unreasonableness of this statement. One hour after the patient had ingested the morphine, Dr. McGuire began extending to him his medical aid. The following three hours he spent in resorting to the usual methods in vogue in the treatment of opium poisoning, not omitting of course large doses of sulphate of atropine, and incidentally giving 3ss. of the fluid extract of ipecac, which the doctor naively observes did its work fairly well in an hour and a half. After the lapse of three hours, or in other words, four hours after the morphine had been taken, Dr. Earnest arrived on the *champ de bataille* with a one-pound bottle of potassium permanganate, out of which quantity the patient received three or four grains *per os*. Twenty minutes later the patient sank into a deep coma, and it was only with the greatest difficulty that he could be roused again.

This is the *résumé* of Dr. McGuire's report. The reader will probably agree with me as to the peculiarity of the doctor's claim "to have relied upon potassium permanganate." I wish he had done so, for the timely and judicious employ of the remarkable salt of permanganic acid would have saved him a great deal of trouble and anxiety. In the first place, it would be impossible for anyone reviewing the doctor's report to know whether the three or four grains of the antidote were sufficient, even if they had been administered immediately, as we have no report of the amount of morphine taken. Second: In my original article on the subject,[1] I suggested the immediate use of from ten to fifteen grains of the antidote well diluted, irrespective of the quantity of morphine taken; and by what peculiar ratiocination the doctor could have concluded that by administering three or four grains four hours later he was following my method, I am unable to understand. As an analogue, if the doctor should prescribe a drachm of any medicine to be taken at a certain time, and his patient takes five minims three hours later, would the failure of the treatment reflect at all upon the doctor's method? Now, Dr. McGuire followed my method to the extent of using the antidote, but as regards time and quantity he was wofully injudicious. As to the deep coma supervening twenty minutes after the administration of $Mn_2K_2O_8$, it is out of the question that the permanganate could have caused this. I have yet to find any therapeutist who would impute narcotic qualities to it. This coma was only a relapse which, as the doctor is probably

[1] MEDICAL RECORD, February 17, 1894.

aware, is not an unusual feature of opium poisoning. However, it may have been aggravated in this particular case by the large doses of sulphate of atropine which the patient had injected into him.

WILLIAM MOOR, M.D.

355 BOULEVARD, NEW YORK, September 28, 1894.

LEPROSY IN INDIA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: On p. 699 of the MEDICAL RECORD for June 2, 1894, in the review of the paper by Dr. White on the subject of "Leprosy," it is stated that there are in India two hundred and fifty lepers to day. This is very far from the truth, as the number given by the census of 1891 makes the number 119,044, and this is not quite complete, as it is rather above this number than under.

In an asylum alone, not far from here, there are over two hundred. In the asylum I have charge of there are one hundred. Besides these two asylums, in the Punjab alone there are over a dozen other asylums and places where lepers voluntarily have congregated. Some of these are under government or other control, while others are simply places which the lepers make a stopping-place, from which to go out daily, or for a few days at a time, begging for their support.

I am sending you by this mail reports of this asylum for 1892 and 1893.

Yours very truly,
Th. B. CARLETON, M.D.,
Superintendent Leper Asylum.

SABATHU, PUNJAB, NORTH INDIA.

TABLET TRITURATES.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: If space permits, will you allow me to point out a matter that needs some correction. I think it will be acknowledged that tablet triturates have come to stay, at least for many years to come, they are certainly a "convenient and elegant" method of medication, but as prepared at present I think they are, at times, far from being "safe and accurate" as the manufacturers claim.

I have carefully examined samples from several different manufacturers in various States and find the same objection to all, namely that the ingredients are not triturated but simply mixed. This might do very well where the medicines are of a harmless nature, although by no means commendable, but when tablets containing arsenic, strychnine and the like are so carelessly made that you can dig out the various combinations with a sharp-pointed knife under the naked eye, I think it is time to cry halt. I verily believe that I have seen evil effects from several such tablets, and if I know of any better make I should leave all the others alone, but, as I said before, I find them all alike.

In my humble opinion all mixtures ought to be ground and triturated so that the finished tablet should exhibit one uniform color throughout the whole, and that the individual drugs should not be distinguishable even under a moderate magnifying glass. Only such can be safe.

"COUNTRY DOCTOR."

EAST EDDINGTON, ME., September 10, 1894.

A New Salt in an Ammoniacal Urine.—Cases of persistent and marked alkalinity of the urine, due to long administration of much lime-water, will be found on examination to be instances of ammoniacal urine due to the presence of a salt of carbamic acid. If, however, the lime-water is given in large quantities and continuously, it will lower the total output of ammonia as markedly as do the carbonates of the fixed alkalies, though then lime-water causes the appearance of free ammonia, which sodium carbonate does not do.—ABEL.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 6, 1894.

	Cases.	Deaths.
Tuberculosis	129	84
Typhoid fever	25	17
Scarlet fever	24	4
Cerebro-spinal meningitis	0	2
Measles	18	4
Diphtheria	112	21
Small-pox	9	1

The Typhoid Spine.—It is very probable that several distinct sequelæ of typhoid fever have been called "The Typhoid Spine." Four cases of neurosis following enteric fever are described by Dr. William Osler in the fourth volume of the Johns Hopkins Hospital Reports. In defence of the neurosis theory he states that joint and periosteal troubles are by no means rare sequences of typhoid fever, but that such symptoms do not usually develop after convalescence has been for some time well established, and that the periostitis, which is seen more frequently about the sternum and ribs, proceeds as a rule to suppuration. Periosteal swellings may disappear without suppuration, though periosteal thickenings protracted through weeks and months usually develop abscesses. Yet it is difficult to conceive of attacks of pain, lasting for months, due to a simple perispondylitis, which in none of the four cases passed on to suppuration. Though neurasthenia may not be the cause of all cases of "The Typhoid Spine," these four patients gave Dr. Osler that general impression, and it seems to him as probable that many of the cases are simply examples of the painful neurosis known as "spinal irritation," and analogous to the painful condition met with in the "hysterical spine," in both of which the patients may have pains on the slightest movements of the back or of the legs. In one of the cases the rapid recovery in a few days, with the disappearance of all the symptoms, was quite inconsistent with a chronic perispondylitis. In the four cases of this sequela of enteric fever, described by Dr. Gibney, of New York, as "The Typhoid Spine," there was the production of pain on the slightest movement, whether lateral or forward, and the absence of any marked febrile disturbance or neuralgia. All the painful backs after typhoid fever may not be neurotic, however, as there is a possibility of the existence of perispondylitis in some cases.

The Spirit of Quackery within the Pale of the Profession.—In an address delivered at the annual meeting of the Midland Branch by Dr. J. West Walker, the author, after referring to the characteristics of quackery in its barest and most uncompromising forms, proceeded to inquire whether or no the enemy—quackery—had gained an entrance within the profession. He animadverted upon the tendency on the part of certain dealers to advertise proprietary preparations with an amount of elaboration which appeared to him to be quite uncalled for (*The British Medical Journal*). He then turned to the attitude of consultants with regard to treatment, taking occasion in the first place to pay a high compliment to the diagnostic skill commonly exhibited, and frankly admitting that assistance in treatment was often obtained from them. But, he added, when I send to a consultant I invariably ask myself what novelty shall I have to procure, and this, notwithstanding it is the rule to have my surgery well supplied with most of the established therapeutic agents. The recently born mineral water or proprietary dietetic, the endless variety of the carbon derivatives with their break-jaw names, the latest importation from America, some form, of course, of antiseptic, the newest tabloid, capsule, or cachet, or some

drug, it may be, not to be found in the Pharmacopœia nor the usual trade lists, but only to be obtained from a particular chemist; these and such like form a tempting catalogue of choice novelties from which selection may be made according to fancy. I make it a point of honor scrupulously to carry out the consultant's plan of treatment, but if the case be chronic, say of cardiac or renal mischief, I soon find that one by one these addenda are dropped and that the general management of the case falls back upon the original adviser. He has to bring into play all the skill and judgment he may be possessed of to meet the various and varying symptoms as they arise, aided and supported by the line of right principle which he has received from his professional brother. But more, our patients usually return to us loaded with minute instructions as to diet and regimen.

Unfortunately, especially in the matter of diet, these instructions are by no means uniform. Different advisers give different advice. *Quot homines tot sententiæ.* The old adage that "what is one man's meat is another man's poison" seems to be completely lost sight of, and anyone whose inclination prompts him to do it can easily ride his hobby to death among the intricate bypaths of dietary tables. Exact details, both as to quantity and quality of the fish, of the flesh, of the vegetable which only are to be allowed; nice distinctions as to what beverages may be swallowed; careful directions as to the time for the infusion of tea; explicit rules as to meals, exercise, and habits generally; these and similar minutiæ are laid down and enjoined with great exactitude. If the patient can be induced to have faith in this dogmatism and obey it, if he adhere strictly to the diet and regimen laid down for him, if he become afraid of the taunts of kind friends on the least infringement of the doctor's orders, benefit to health will generally follow. If the patient who is in the habit of dining off half a dozen courses and of making his other meals proportionate, who freely partakes of beer, wine in variety, and whiskey-and soda—if such a patient can be induced to forsake his gustful yet disgusting diet and daily to take instead four pints of hot water and sundry messes of minced beef, it is easy to see that good will be done by the change, at any rate, for a time. And since the end is usually greater than the means, and since the end of professional effort must ever be the patient's good, something may be said in favor of means which conduce to such a desirable end, even though they be a wee bit irregular. May it not be well, however, to ask ourselves and fully realize the answer to the question, How far are these good results the positive effects of what we cause our patient to do, and how far the negative effects of what we cause him not to do? The removal of some vicious habit, some worrying occupation, or some unhealthy environment may really be the cause of good, and our remedies only contribute to bring about the result by the oblique rather than by the direct method. As before hinted, the oblique method may have something to commend it, and the practice of it may even, like homicide, be, under some circumstances, justifiable. Let not our eyes be dusty. If we strip this line of practice of adornment, and look upon it in its nakedness, we in too many instances recognize so many of the family features that if we would call a spade a spade we can designate it by none other than the family name. It may be that stratagem in medicine, as in war, must still be occasionally resorted to; be ours the care lest we award to the victory won by it glory in amount equal to that which we bestow upon the result of a hand-to hand encounter.

Returning again to the subject of new remedies, Dr. Walker observed that a new drug which was really useful required little advertisement. Of this the history of the introduction of chloral and cocaine was sufficient proof. He protested against the abuse, not the use, of advertisement; while condemning credulity, he would not favor its opposite—a dogged scepticism, which in an inexact science, such as medicine, was perhaps even more harmful than credulity. In conclusion, he uttered a note of warning as to the practice of prescribing mixtures in strong form, to be taken in doses of one or two drachms or of so many minims. To prescribe concentrated mixtures of strychnine, of arsenic, or of mercuric perchloride, and direct them to be given in various degrees of dilution was, he considered, a custom fraught with danger. To place side by side on the nurse's table, often in a dimly lighted room, two bottles of equal size —the one containing sulphate of magnesia to be given in doses of two tablespoonfuls, the other containing chloral to be given in doses of one teaspoonful—was a risky procedure, and one which, were the directions never so explicit, paved the way for that terrible catastrophe—poisoning by misadventure.

Treatment of the Milk Teeth.—According to *The Lancet*, Mr. Edmund Owen read a short but interesting paper on this subject at a meeting of the Odontological Society. He asked the question whether it was always the best plan to stop decayed milk teeth, and whether it was really an advance in treatment. He thought that in some other branches of surgery many so called improvements had in fact put back the dial of surgery, and that dentists were carrying conservative treatment too far, hesitating to extract from fear that the due development of the jaws would be interfered with, or that the second teeth would have to scramble for position after premature loss of the temporary teeth; but in his opinion the development was due to the presence of the tooth-sacs contained in the substance of the bone, and, with regard to the crowding, should it take place, it could be easily remedied by careful watching and weeding out if necessary. He said: "There is one point in connection with the dental surgery of children's teeth which I am sure has not received the attention which it so urgently demands—it is that children's mouths should undergo regular periodical inspection." Mr. Owen laid especial stress upon the removal of carious teeth where there was enlargement of a lymphatic gland in the neck, which, he said, so many dentists refused to do, probably foreseeing some possible contingency in connection with the eruption of the permanent teeth. Where the pulp of a tooth was exposed it was an extremely painful and difficult thing to do to clear out each fang thoroughly, and unless this were done it was merely "rolling a stone over a whited sepulchre," and further trouble was inevitable. The very germ with which the dental surgeon temporized in the alveolar region was often subsequently encountered in a submaxillary glandular abscess, but Mr. Owen thoroughly agreed with stopping milk teeth where the carious cavities were small or could be rendered absolutely aseptic.

A Statue to Thomas Sydenham was unveiled by the Marquis of Salisbury at the recent meeting of the British Association for the Advancement of Science, at Oxford. The presentation was made by Sir Henry Acland, Regius Professor of Medicine to the University.

Mineral Matter in Teeth and Bones.—The framework of the bones and teeth contains lime, phosphoric acid, magnesia, potash, soda, carbonic anhydride, water, chlorine, and fluorine. The water of crystallization passes off at a very high temperature, but the constituent water can be separated only by fusion with silicic acid.—GABRIEL.

Tobacco and Fatigue.—Moderate smoking, in one accustomed to tobacco, neither increases the amount of work done, nor retards the approach of fatigue. On the contrary, it perhaps slightly diminishes muscular power, and hastens the onset of fatigue, though these positive effects could not be conclusively demonstrated.—HARLEY.

The Future of Children with Hip-disease.—According to Bruns, six per cent. of patients under ten years of age, who have been cured of hip disease, nine per cent. of those between ten and twenty years, and seven per cent. of those above twenty years of age, succumb eventually to tuberculosis of other organs.

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CONSUMPTION: ROUGHING IT VS. THE COD-DLING TREATMENT.

BY CHARLES E. PAGE, M.D.,

BOSTON, MASS.

"CONSUMPTION" is the same *bête noire* to-day that it has ever been. It is everywhere regarded as incurable, once fastened upon its victim. And yet, the records of the dissecting room prove that in numerous cases lungs, "wasted to one-half of their normal size have been healed, and after a perfect cicatrization of the tuberculous ulcers have for years performed all the essential functions of the sound organ" (Oswald). This fact, with all its great significance, should be impressed upon the mind of every medical student. It is doubtless true that in every instance, of all who live to tell the tale of an inherited or acquired tendency to pulmonary emphysema and of its banishment, we would find a history of either an enforced or a voluntary change from an in door to an outdoor life, with some radical modification of the living habits of the individual, especially in the matter of his activities.

The writer recalls the case of a cousin who was killed in California by being rolled down a mountain's side under a drive of logs. Possibly the first log that rolled over him did the business, but it was said by his companions at the time that nothing short of that sort of treatment could ever have killed this giant of 6 feet 3 inches, weighing 220 pounds, and noted for his muscular strength. And yet, throughout his boyhood and to the age of fifteen, he was about the poorest specimen of humanity imaginable. No one believed that this cadaverous, yellow-white faced, round-shouldered, hollow chested lad, with a "grave yard cough," would live to reach maturity, least of all become a robust man. No news concerning my cousin's condition reached me during an absence from home of about two years, and one may imagine my amazement when at our first meeting I looked up at the face of a six-foot athlete claiming to be the cousin whom I left in so sad a plight.

What had wrought this seeming miracle? Simply an enforced change from the life of a molly coddle to that of a worker in the open air. My uncle was the ferryman at N., a little village on the Kennebec, in Maine, and owing to an illness his only son was compelled to take up the work, which, though desultory, required the putting forth of all the muscular power to which he could whip himself, and exposure to all manner of rough weather. Instead of dying outright, as his poor parents feared, it was soon evident that his new life agreed with him; he began to mend, and it was doubtless owing to his father's prolonged sickness that the boy got his start toward robust health.

Instances more or less similar to the one just related are constantly occurring, but their true lesson is appreciated only by the few. Into another consumptive's head there came in some way the crankish notion of beginning the practice in summer of taking a cold plunge and swim in the neighboring pond and of continuing it throughout the year, breaking the ice in winter for his morning bath. Result: A perfect cure.

Another case that came under my notice was that of a young man who had as a clerk in a store fallen into decline and was forced to resign his position. He consulted me and was for a time under my care. He had at first no appetite, little strength, an emaciated body, and a distressing cough. He begun to improve somewhat, but was greatly disturbed by his enforced idleness, with all that this implied to a man with an ailing wife and child requiring support, and one day he informed me that a friend of his wanted a man to drive a milk wagon and would give him the job, and by my advice he accepted. Hustling out of bed at 1 A.M. first in the fall, and then throughout the winter, for a long drive, often in bitter weather, regardless of rain or snow; to jump off and on the cart in the delivery of his wares, gave him a boom toward health that resulted finally in making him a robust man.

An acquaintance of mine, once wealthy, lost all of his property except a "consumptive" horse that he had been keeping "for the good he had done," and whose ill condition had resulted from high living and a sedentary life. His master finally started a little grocery business, and at the risk of arrest by the agent of the Society for the Prevention of Cruelty to Animals, he began delivering groceries with the "patient." After a time the poor creature began to show signs of picking up, and as business increased, the work, of course, became harder; but the more he did the more he could do, and within a year this hide bound victim of misplaced kindness was again the plump, smooth, handsome creature that first attracted his master's attention. At that time he was fat, and he looked fat now, but this appearance was due to a fully developed muscular system, the result of hard work and enough to eat, with the natural improvement in digestion and assimilation from plenty of exercise in the open air.

As an illustration of the benefits arising from chest exercise, we have the case of the consumptive who received a wound in the leg and had to employ crutches. Finding that their use seemed to relieve his cough, helped him in the matter of "raising," etc., he got in the way of hobbling about as much as his strength would permit, and this naturally meant more and more, until by the time he could use his legs with freedom he was on the road to high health, and he did become healthy.

A few years ago a prominent Connecticut physician died, and an autopsy was made with the expectation of viewing a "lung and a fraction," with which he had lived for thirty years, after a prominent Boston doctor, in consultation with the late Dr. Willard Parker, of New York, had declared that he could not live a year. He had then just graduated, and he took his case into his own hands, and began a system of roughing it, out in all weathers, eating freely of hearty food. for which he gained an appetite by a nip of brandy at dinner. He became a robust man, and died finally of chronic gastritis resulting from sticking to the brandy habit! His lungs were both sound, and the doctors' diagnosis was, therefore, absolutely wrong; but their prognosis would without a doubt have proved correct but for his right about face and the adoption of the bulldozing treatment, so to say.

The writer has long since adopted this principle in the treatment of "consumption," which he regards as a disease of dyspeptic starvation. In its final issue, in cases that terminate fatally. patients really die of fatty degeneration of the lungs, so far as the local lesion is concerned. There is utter lack of full. free exercise of the lungs; the easy going, loafing patient does not half breathe, from lack of such physical exercise as would

cause involuntary deep breathing; and as a consequence the lung tissues degenerate with fat, as is true also of the entire muscular system.

Something like a dozen years ago, at a meeting of the New Orleans Pathological Society, Dr. H. D. Schmidt, whose researches had been extended and minute, made an important microscopical demonstration for the purpose of disproving Professor Koch's so-called discovery as to the bacilli of tuberculosis. Professor Schmidt claimed to demonstrate that the "bacilli" were simply fatty crystals, but he at least succeeded in showing that the condition of the lungs was one of fatty degeneration. We know, however, that the diseased lungs do contain minute living organisms, but it is evident to my mind that the bacillus is simply a natural scavenger of the decaying tissue, and that its function is really life-conserving.

It has for years been my practice to treat consumptive patients on the plan indicated in the foregoing paragraphs; the roughing, toughening, hustling plan, varied according to the special needs of each individual, which occasions a demand for a generous amount of wholesome food, with appetite and digestion to correspond. The result is as satisfactory when the treatment is prescribed by an expert as when it is merely the outcome of accident, and I will venture to introduce here a couple of instances of radical cure.

B. H——, at present one of our noted American artists in Paris, came under my care in March, 1885, after a three years' decline in Paris and London, and a return to his native Philadelphia to die, as they all believed, under the care of the old family doctor. The latter ordered him to Colorado, as is still quite the usual custom in hopeless cases, to loaf away the remnant of his life. He returned, however, after a few months' stay, unimproved, and it was at this point of the case that he wrote to me the history of his condition and asked my advice. After a few weeks' correspondence H—— and his wife came to Boston, that the patient might be directly under my eye. He had, meantime, made a slight gain, and could do more rather than "crawl a mile on level going," as he described his physical powers in his first letter. He could manage a couple of miles without extreme fatigue, and from day to day I cracked the whip over his back, so to say, to secure something of a gain in speed and distance at each trial, as well as in the number of his daily walks, with ample rests between, chiefly lying down. He was a brave fellow and he entered into the plan with all the spirit he could muster. On rising from bed he was directed, as a daily practice, to take a quick dash of cold water all over, a good towelling, and an air-bath of a half-hour or more, with such all-around exercises as he could manage. After a few weeks he would, naked, pull at the chest-weights for an hour or more before breakfast, like a man sawing wood. Light, low-cut, loose shoes, only, were worn. He went barefoot several hours every day. Before the end of summer he could do fifteen miles in the course of the day, at several stretches, including a good bit of running, and was eating hungrily twice a day of good plain food. Three tonics only were exhibited: Fresh air, fasting, and exercise. My counsel to him was what it ever is to all classes of patients: Never eat unless hungry. To eat without appetite is a species of self-abuse inexcusable for the sick or well. Never eat when tired, nor exercise actively soon after eating. Learn to distinguish between hunger and mere appetite; let the test be the least appetizing foods; and if hungry enough to enjoy such, one may partake of the more agreeable kinds, as a steak or chop, a mellow ripe banana, new peas, corn, string-beans, all of the seasonable fruits, berries, melons, etc., but the consumptive, of all men, must avoid gormandizing.

In October, after seven months' physical training, H—— and his wife returned to France, and within a year thereafter he was enabled to report himself "as sound as a dollar." I have heard from him every year, and he remains still a typically healthy man.

R. T. S——, aged twenty-three, a most unpromising subject, weighing on my scales 99 pounds, came to this town to be under my care, in February, 1887. His appearance was so pitiful as to almost excite disgust. His weakness was so extreme that his brain was seriously affected. But he seemed in dead earnest to get my ideas on every point to carry them out to the letter. He kept most of the time in the open air, regardless of the weather, worked up gradually in his training, indoors and out, but he grew restive from having nothing to do but attend to himself. He finally conceived the notion of canvassing from house to house for orders for provisions as a means of keeping himself out of doors and his mind occupied with something beside his own symptoms. His success was largely due to the pity excited by his forlorn appearance. He would get his orders, and then visit the large markets and buy the meats and provisions to fill them. He was therefore a merchant and had the stimulus of looking for profits. All this work was on foot in all weathers during March, and continuously thereafter, and he began to gain in weight and strength. In May he weighed 110 pounds, and the following year he tipped the beam at 145, and was a bright, handsome fellow.

In both these cases the patients at once, by my direction, abandoned the use of the heavy flannels they were wearing when they consulted me, though they were, of course, well protected from the cold when out of doors by means of outer garments. The disuse of under-flannels as an important part of hygienic treatment will doubtless fail to commend itself to most of my readers; but in a very busy practice during the past ten years I have invariably urged the plan upon my consultants, and I have succeeded in a large number of instances in inducing them to abandon the use of underwear altogether, not even compromising with light-weight, and I have never had occasion to regret it; but, on the other hand, I have won the gratitude of every individual who has given the plan a fair trial.

Is it not clear to every reflective mind that in all ordinary homes we and our patients are living in summer weather, so to say, even in mid-winter? Why, then, should we wear winter flannels in the house? The employment of outer garments for out-door wear meets all the requirements for comfort, and all the better when the skin is not sweltered by flannels in the heated, often over-heated, living-rooms; and I have observed as an invariable rule that those who have adopted the plan here advised are the most indifferent as to the use of outer garments when they do go out, even in winter. It is the ones who swelter the skin with heavy flannels in their warm dwellings, offices, stores, etc., who shiver most in cold weather in spite of the heaviest sealskin sacques or fur-lined top coats.

The writer has worn no flannels, winter nor summer, since February, 1880, removing during this winter month, the heaviest of Morley's Scotch undershirts and drawers. For years he had, in his efforts after comfort, selected his winter flannels from garments of heavier weight each fall; but all to no purpose, except, seemingly, to make him subject to a kind of chills and fever, very sensitive to cold when out of doors, and exceedingly uncomfortable indoors at all times, and also out doors in moderate weather. He was subject to frequent "colds" affecting throat and lungs, and a constant sufferer from cold feet, and in fact was in a condition to slide into a consumptive's grave, as had quite a number of his near relatives who died in their flannels! But now, at the age of fifty four, he is one of the most robust of men, able to lead most of the young men in a cross country run, not limiting the distance. And this change was produced by the abandonment of the coddling plan, replacing it with a rational application of the rough-and-tumble scheme outlined in this paper.

"It is not always realized that the ability of man to carry his climate with him, or essentially modify it wherever he chances to be located, is a power that can be

used for harm as well as benefit," says the *Philadelphia Polyclinic*, editorially. "When we depart from the guidance of the immediate sensations and race instincts, and shape our conduct according to definite ideas, we accept a guide that may be better or worse than those of nature; and, in the matter of clothing, there can be no question but that incorrect ideas lead many into the very disease and danger that they are striving to avoid.

"All observation shows that for individuals in comparative health, no possible regulation of environment, either in the selection of a natural climate, in the construction and heating of dwellings, or the choice of material and amount of clothing, can supersede, or, indeed, compare in importance with the influence of the physiological mechanism for the regulation of heat production and heat distribution, within the body.

"To keep this in the most perfect working order should be the first concern of one who fears disease from change of temperature; and it cannot be kept in good condition without opportunity for constant and considerable exercise. The natural stimuli which provoke its action, and which are essentially variations of heat and cold, particularly properly proportioned shocks of cold to the surface of the body, must be supplied or permitted, and on the other hand, the nervous system, of which it is an integral part, must be kept in good order by the proper balance of physical and mental exercise and sleep. Probably the persons who suffer most from 'colds' are those who, in their fear of such departures from health, try hardest to avoid the changes of temperature that are necessary to keep the heat-regulating organism in good condition."

The person who, on rising from bed in the morning, takes an air bath (as everyone should) in his unwarmed, winter sleeping room, for ten to thirty minutes, with a good towelling and hand polishing of the skin, prefaced, perhaps, by a dash of cold water with the wet hands, finding himself finally quite warm though naked, is in a position to conclude that the single, ordinary suit, minus flannels, will sufficiently "protect" him from cold when he descends to the warmer living-rooms! His overcoat and a brisk pace will do the business for him when he seeks the actual winter weather without, and this vastly better because of the freedom of the skin indoors.

Chilliness, or that more or less vague, shivery feeling that comes especially to all clothed animals, is apt to mislead the inexpert. Who has not experienced it in the evening, perhaps before a warm grate, temperature in the room at 70° F. or over, the body clad in full winter costume, and, on disrobing for bed in a cold room found himself comfortably warm? This seeming miracle would happen to every shivering mortal if he would give the skin a few active passes with his hands or a towel, instead of dodging from his clothes into bed in cowardly fear of "catching cold."

A leading question with me in every consultation, as a means of ascertaining how bad the condition is throughout the year, is, "Do you catch cold easily?" In the great majority of cases the reply is in the affirmative. "Yes, I am seldom free from a cold," one will say; or, "I catch cold if I even look out of the window." "I don't know whether it will take more than one of the air-baths you have prescribed to kill my wife," wrote a correspondent, "for she usually gets a cold if a fly wings past her; still, live or die, she says she is going to obey instructions." She began abruptly to take the air baths, gave up flannels, and within six months this 91½ pound woman was tramping barefoot three miles at a stretch in the surf along the beach, and had gained a few pounds of honest muscle, and was no longer a victim of the colds delusion. Symptoms of ill condition she would from time to time observe, due to some error in living habits, but she has learned to call things by their right names, at least some things.

Now and then a patient is able to declare that she seldom has a cold; and it always happens that she is one of the few not given to the practice of bundling herself up as a means of avoiding the disorder.

"How is it that I always catch cold when I put on my winter flannels?" queried a patient, who was upon the point of making his usual fall change of underwear. My explanation was so convincing to him that instead of putting on his thick flannels he took off his thin ones, and in the spring he was able to declare that he had never, since his unflannelled boyhood, passed a winter with such immunity from the popular disorder, "colds." He had, moreover, he said, enjoyed a greater average of comfort than formerly with the inner suit.

An elderly lady, herself a victim of heavy flannels and a "chest-protector," and who died, finally, from her fourth siege of pneumonia, once remarked to me in the presence of a little company at her hotel, that "there might be a great deal in your theory about the mischief of underwear, after all. Sam [referring to her husband by his given-name] never wore flannels till the last winter of his life. I had coaxed him to every fall, but he would not give up till one fall he let me get him some nice warm flannels. He seemed to have a cold all winter long, and he died of pneumonia in the spring." "Well," I replied, "you may have the sublime satisfaction of knowing that you were responsible for Sam's premature death!" Twenty years having elapsed since her investment in men's underwear, she was able to join in the laugh that was raised by my somewhat brutal remark.

The conviction has grown upon me from many years of special study of the question, that a "cold" is really a filth disease, and that, as that wisest of men, Dr. Benjamin Franklin, wrote,[1] "the causes of colds are totally independent of wet or even of cold." If this is not true, how can we account for the efficacy of the barefoot cure in certain disorders? When an empress suffering from neuralgia to the point of distraction finds complete cure from going barefoot for several hours every day in the wet grass about the palace grounds; when Baron Rothschild goes to Woreshofen and is pleased to pay a large (voluntary) fee for similar treatment, under Kneipp; when Dorothy Drew, the granddaughter of the "Grand Old Man" of England, becomes "irrepressibly healthy," from "going barefoot all the year around, indoors and out, in all but very muddy and the very coldest of weather," is it not about time for us to revise the old-time notions as to what constitutes really wise care in the matter of clothing?

The skin is a breathing, as well as an excreting organ, and both these functions are seriously impeded by the second, or inner suit. Indeed, the employment of any clothing at all, at times when not absolutely required for protection against cold, is a tax upon the animal organism, and against us in the search for health. This is doubtless especially true concerning the care of the feet. "Strip off your flannels, and you'll come out all right," was the advice for which an uncle of mine, in Australia in 1853, paid a guinea, and which he afterward had reason to believe would have been cheap at ten times the cost; for by obeying the level-headed old native doctor's advice he escaped the "climatic fever" which cost my brother his life there shortly after. The latter could not divest his mind of the superstition, still prevalent, that it is dangerous to keep comfortable in hot weather!

But how about our consumptive patient, shall he not be allowed to dress comfortably in winter? Comfortably, yes, by all means; but it is the greatest average of comfort we have to secure. If he is to pass all of his time in the open air, in winter, he may dress accordingly, even to the use of underwear; but as the average patient does nothing of the sort he will be better off without it. He will have chilly sensations at times whether he does or does not wear flannels, but it is vastly better for him, as for us all, to secure a feeling of warmth by means of a little "shaking up" exercise, than to try to secure comfort solely by means of excessive

[1] See his Essays, p. 216.

clothing. It is astonishing to one unfamiliar with the experiment to observe the almost instantaneous glow of warmth that results from a little arm-swinging, a few sharp slaps along the sides of the legs, a bit of a jig-dance, or even a few simple shrugs of the shoulders alone; and every little turn of this sort is in the line of physical training, from lack of which, in ninety nine cases in the hundred, our patient has fallen into decline. Generally speaking, the consumptive is one who has grown weaker and weaker, and, however slender he may have become, relatively fatter from month to month, the muscular system having steadily degenerated, because he has exerted himself less and less, being forever encouraged in this course through the mistaken kindness of all about him. He has, therefore, finally become "tired" in a manner prohibiting all hope of rest this side of the grave, except it be sought along radically changed lines.

Says Dr. Felix Oswald:[1] "A common catarrh will not prevent a man from running upstairs or walking uphill for minutes together without anything like visible distress; subjected to the same test, a person whose lungs are studded with tubercles will pant like a swimmer after a long dive, and his heart beats will most likely be doubled in frequency. Combined with a hectic flush, night-sweats, or general emaciation, shortness of breath leaves no doubt that the person thus affected is in the first stage of pulmonary consumption. If the patient were my son, I should remove the windows of his bedroom, and make him pass his days in the open air—as a cow boy or berry-gatherer, if he could do no better. In case the disease had reached its deliquium period, the stage of violent bowel complaints, dropsical swellings, and utter prostration, it would be better to let the sufferer die in peace; but, as long as he were able to digest a frugal meal and walk two miles on level ground, I should begin the out-door cure at any time of year, and stake my life on the result. I should provide him with clothing enough to defy the vicissitudes of the seasons, and keep him out doors in all kinds of weather—walking, riding, or sitting, he would be safe: the fresh air would prevent the progress of the disease; but improve he could not without exercise. Increased exercise is the price of increased vigor. Running and walking steel the leg sinews; almost any bodily exercise—but especially arm swinging, wood-chopping, carrying weights, and walking up hill—increases the action of the lungs, and thus gradually their functional vigor. The problem is to make out door exercise pleasant enough to be permanently preferable to the *far niente* whose sweets seem especially tempting to consumptives. This purpose accomplished, the steady progress of convalescence is generally insured, for differences of climate, altitude, of age and previous habits, almost disappear before the advantages of an habitual out door life over the healthiest indoor occupations."

But, when he comes in doors it must not be to find a close atmosphere, such as at present the average home provides; for, as Dr. Pitcher remarks in his "Memoirs of the Osage Indians," "the symptoms of consumption (caused by smoking and confinement in winter quarters) disappear during their annual buffalo-hunt, but reappear upon their return to the indolent life of the wigwam." And even an hour or two in the average theatre, church edifice, hall, or dwelling will counteract the benefit arising from spending an equal length of time in the free open air. In this fight for his life no patient can afford to hazard his chances by any letting up in the "medicine." At best, life is a struggle; courage is demanded; and in no phase is this more absolutely true than in the consumptive patient's endeavor to secure a return of health.

"You'd hardly think to look at me, I guess, that I'd been turned out to die of consumption before I came of age," said a 200-pound man of good muscle, a sturdy eater and sleeper, to a New York *Sun* reporter. "It's a fact, though. I weighed 95 pounds when I left home. My folks were poor, and they sent me to Kansas in a prairie schooner, never expecting to see me again. I began to pick up as soon as I got up on the rise of the plains. I lived in a cabin that was wide open day and night. Then I went into the army during the war, and after that did a lot of work grading and surveying for a railroad, and all the time I was living and sleeping with only the sky for a roof. I have been farming it for the last dozen years, and my windows are open day and night. Air is the best medicine there is."

It is for a profusion of this medicine that people go camping out. The consumptive patient must camp out all the year around, as does the writer and his entire family, practically. All one has to do is, in summer, to run the curtains up, burn the smothering screens, open wide the windows, top and bottom, and let the breezes blow freely through the house; in winter some degree of modification of this free ventilation is admissible. This means a lot of dust in summer, of course, and the fading of the rugs and furnishings, but it keeps the color in the cheeks, this "camping out at home."

"Beware of draughts," is the great cry of most writers on health. In other words shun the running stream, drink from a stagnant pool. "The only trouble about a draught," says Oswald, "is that it is usually not big enough!" And rationally considered this means nothing out of line of true hygiene. It does not mean that even a well man should sit passively in a strong current of cold air when he is fatigued or weakened from any cause.

It does mean, however, that no dwelling, no sick-room, can be sufficiently ventilated without a sufficient current. For winter ventilation, probably no better method can be devised—for the extremely cold weather—than to mismatch a number of windows in each room by means of a four inch board under the lower sash, which allows, through the middle opening, and without "draught," pretty free influx of fresh, and the passage out of foul, air. Open grates are without doubt an excellent thing, but it should be borne in mind that they let in no fresh air. The open windows must do this; and in the warm periods of mid-winter they should be freely opened throughout the house.

The consumptive patient on coming in from his outings may well seek his chamber with its always wide-open windows, and lie down with plenty of blankets for protection, instead of sitting, as a rule. Sitting is altogether unnatural, and the less of it he does the better. He may well avoid all unnatural practices until he finds himself safely "out of the woods."

867 Boylston Street.

[1] Physical Education.

The Temperature of the Electric Arc is said to be about 6,152° Fahrenheit.

Medical Valets.—Marcellin Pellet, in a work entitled "Naples Contemporaine," says that the valets of the leading physicians of that city always accompany their masters on their professional rounds, and receive two francs for each visit. They are paid no other salary, and out of those fees have to meet certain charges, such as that for lighting the house.—*Médecine Moderne.*

A Confinement that Didn't Confine.—A medical man who had practised among the North Dakota Indians, writes that their women as a rule had very easy labors; in fact, it was no trouble at all for them to have children. At one time he saw several women coming toward the only store at the agency, across a wide open space in front, each carrying on her back a bundle of sticks. Suddenly one stopped short, looked a little wild, dropped her bundle of sticks, spread her feet apart, strained a moment, and then stooping, made a pass toward the ground with her knife that she drew from its sheath, picked up something which she wrapped up in her shawl, and leaving her bundle of sticks for someone else to pick up, passed on into the village. That was a confinement, and the child was born then and there.—*New York Medical Times.*

ACUTE BILIARY DISTENTION OF THE GALL-BLADDER.

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It is always a subject of interest to clear up, if possible, some of the obscure conditions pertaining to cases not infrequently met with in general practice. Such an one, at least in certain of its essential features, is the state to which the title of my article refers. On two or more occasions, during the past few years, I have seen instances of the following kind: A patient is suddenly attacked with intense pain in the epigastric region. Accompanying the pain, which is continuous and remains, during the acute attack, limited to the epigastric region, there is constant nausea and occasional vomiting. The vomited matter is composed of the contents of the stomach, or is pure bile. There is no rise of temperature. There is marked local tenderness on palpation in the region to which pain is referred. Distention of the gall-bladder is not clearly made out, but it is suspected and probable, by reason of increased resistance and perhaps local swelling in its vicinity. The liver is usually somewhat enlarged. Constipation is moderate. The motions are dark brown, insufficient in quantity. The urine is high-colored, but does not contain any bile. It is possible to have a sub-icteric hue of the sclerotics, but there is no other evidence of jaundice. There may be a history of malaria, or lithæmia. The habits are occasionally regular; sometimes there are errors of diet or modes of life, as to exercise and excitement. During the attacks a vomitive with ipecac, a stimulating enema, with a hot-water bag applied locally over the stomach, will afford relief. Usually, however, this relief is only slight in amount, and the pain may last continually for several hours, and be so intense as to require the use of morphine hypodermically. For a day or two following these attacks, the epigastric region is tender. Fluid diet, relative quiet, counter-irritation over the liver, moderate catharsis with Rochelle salts, or carbonate and sulphate of magnesia, and the free use of Vichy water, will usually bring such attacks to a favorable termination in a short time. They recur at irregular intervals, usually after exposure, undue fatigue, emotional disturbance, some imprudence in eating or drinking. They are not followed by jaundice; no gall-stones are passed. They improve very much at first with free evacuation from the bowels of large, liquid, dark colored, bilious stools, which gradually become lighter in color as the individual improves in health. After such an attack the patient is usually well for several months, has no nausea, dyspepsia, epigastric soreness, engorgement of the liver, or as a rule, other evidence of ill health.

Occasionally, I have known sufferers from these attacks to have ambulant neuralgic pains, principally in the hypochondriac regions, but also in the thorax, abdomen, and testicles. Shooting pains in the testicles, with a feeling of weight and temporary swelling of the epididymis, have been observed. Such attacks have been designated gall-stones, acute dyspepsia, catarrhal jaundice, gastralgia. They are unlike all of these, and must be distinctly separated from them. When the abdominal pain is acute I have known appendicitis to be suspected. They are obviously different from this disease. The subsequent treatment of such cases, and between recurrent attacks, is to be found in continuous moderate doses for several weeks of phosphate of soda, sufficient in amount to produce a laxative effect on the bowels. An underlying malarial history has been clearly made out in more than one instance, and yet quinine is of very little value in these cases. Warburg's tincture may be helpful, but not infrequently only renders the condition of the patient worse. Arsenious acid, from $\frac{1}{60}$ to $\frac{1}{30}$ grain, combined with ignatia, has seemed to me to be the best and most rational curative treatment. After stopping the phosphate of soda, or instead of it, small doses every other night of podophyllin, or calomel, for a while have been found very useful. I direct attention to these cases, although not serious as to their immediate consequences in my experience, because they are often confounded with other affections, and because sooner or later, if not properly cared for, I am of the opinion that they lead directly to the formation and deposit of biliary calculi.

Two cases that I have observed and treated—one of them for many years—have occurred in young men between twenty and thirty years of age. Both of them lived an out-door life, were devoted to athletic sports, and generally speaking, were careful as to their diet. Similar, or analogous cases, occur more frequently among men than women. I have seen them occasionally in hospitals, but there they have been so much obscured by complicating disorders that I have not felt so confident in regard to my diagnosis. This diagnosis, which has only been a suspicion for some time, has now become a confirmed judgment in view of several more or less similar instances that I have taken care of. I am not aware that this precise affection has been emphasized or insisted upon by anyone else in quite the terms, nor in the manner, which I have tried to make clear. Engorgement, or congestion of the liver, does not fit such cases, as I believe, although slight enlargement usually accompanies the symptoms described. Besides, I have noted the other symptoms more than once, when there was no enlargement of the liver at all.

To my mind, these attacks of acute distention of the gall-bladder with bile, are not unlike, in their analogy with the development of calculous disease of the gall-bladder, to what we have similarly defined, when we consider the relationship of the pre-albuminuric stage of chronic Bright's disease with the development of nephritis as a clearly formed malady.

To give a plausible explanation of the etiology of these cases, I am almost forced to admit the existence of a spasmodic contraction of the gall-bladder which is sufficient to shut off in part temporary connection with the cystic duct. I cannot believe in the extension of an inflammatory condition from the duodenum, as there are none of the previous stomachal symptoms which are so usual in catarrhal jaundice. Moreover, the jaundice itself does not occur as it would, unquestionably, if the hepatic duct or common duct were occluded even for a short time. Again, it is more than difficult to admit the existence of an inflammatory state of the cystic duct which would allow the common or hepatic duct to remain intact or unaffected. Of course, the post-mortem revelations in similar instances cannot be given, as such cases are not fatal, and we are forcibly thrown back upon the explanation which is most rational, and therefore most satisfactory. Cases have been observed, or at least alluded to, by Murchison,[1] in which the organic occlusion of the neck of the gall-bladder by a gall stone was such as to allow entrance of bile into the gall bladder, but to prevent its exit. It is quite conceivable that a state may be produced after a dynamic manner, which might approximate this condition, *i e.*, that of a plug valve, "and where bile has in consequence accumulated in the gall-bladder."

It has occurred to me that cases like mine have occasionally been confounded with gastralgia, which, however, differs materially from what I have described. The latter disease is rarely so acute, is not accompanied by any swelling or hypertension over the region of the gall-bladder, is relieved frequently by pressure, or with bromides and chloral internally, and the attacks are not followed by copious and frequent bilious stools. In two of my cases, so soon as the spasmodic condition of the gall bladder was diminished, or suppressed, the symptoms of hepatic colic disappeared very rapidly and almost completely. In other somewhat analogous instances, they remained in a far less severe form for a few days. The evidence in these acute cases of biliary distention of the

[1] Diseases of the Liver, 3d edition, p. 381.

gall-bladder, is to the effect that the coloring matter of the retained bile is not gradually absorbed, but quickly eliminated by the bowels. Thus there is a radical difference with chronic cases of occlusion of the cystic duct from calculus, or any other cause where the contents of the gall bladder are an almost colorless mucous fluid. In either the acute or chronic cases of occlusion of the cystic duct, there need be no jaundice, nor clay colored motions. By directing attention to the foregoing facts I hope to throw some light on an interesting affection, which all general practitioners must occasionally see, but do not perhaps designate or interpret as I have done.

HYPOCHONDRIASIS.

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Historical Sketch.—Since the days of Hippocrates and Galen this nervous disease has been known and written on. Hippocrates wrote on hypochondriasis. The cerebral nature of the trouble did not enter into the medical nosology until much later. The ancient idea related to disturbance of the visceral organs situated under the ribs, as the name implies, and the gloom or depression accompanying the disease was ascribed as a result of deficient action in the liver connected with the production of bile, or in a perverted action in the spleen, whence the term "splenetic." This pathological idea was held through many centuries, and may have been popularly handed down by such treatises as Burton's "Anatomy of Melancholy."

In the days of Cullen the malady began to assume a new aspect and appear in its proper place as a cerebral affection.

The disease presents itself in so many various forms, or rather, its manifestations are so pronounced that these have been called by special names, and even worthy treatises have been written thereon. It is evident that all these phases, so much written on at the present day, are manifestations of the same disease; but one symptom standing out more prominently than others, the mental aspect of the case being unobserved, has received a special name, as "spinal neurasthenia," "cerebral or spinal hyperæmia," rachialgia, or spinal irritation, etc. Prominent authors have much differed about the nature and causes of these terms. Many have placed the seat of the trouble entirely in the cord. Griesinger places the malady *in toto* in the scale of insanity, observing minutely the depression, and instancing his observations by advanced hypochondriacal cases. Again, other authors place such signs as muscular asthenopia, motor weakness, cerebral sensations, sensory sensations in the skin, etc., in a separate class and call the trouble neurasthenia, leaving out the mental perversion, though suggesting that the malady occurs in hypochondriacal and hysterical patients.

Sir William Gull in his able article differs from Griesinger, and places the disease in a position midway between insanity and hereditary nervous disease, still retaining the indefinite name of hypochondriasis. He observes its close connection with insanity and its peculiar course, yet does not instance precisely phases of the malady which are often prominent, and in the main absorb all the other features of the disease, as ocular weakness, neurasthenia, sensory hyperæsthesia. Most authors seem to think that a delusion as to being diseased is the essential part of the disease, whereas this is often wanting in definiteness, and motor weakness, irritability of temper, want of sleep, and want of power to direct the attention, or the so-called neurasthenic symptom, is often the leading symptom, without the patient fearing disease, though a mental "cloud" still hangs over the understanding. Dr. Gowers places the disease in its proper category, and observes on its various features, but does not combine its symptoms. In speaking of neurasthenia he simply refers to hysteria, neuralgia, hypochondriasis, as its causes. He might as well have written an article on hypochondriasis as on hysteria, and combined all these symptoms, which undoubtedly refer to this peculiar and frequent and much discussed disease. Dr. Gowers touches, in various parts of his treatise, on some of the features of the hypochondriacal malady, particularly in the article on cerebral hyperæmia, cephalic sensations, neuralgia, hysteria, railway shock, etc. These symptoms connected together form the varying picture of hypochondriasis.

It has, therefore, a mental aspect in all cases, and this is probably the underlying morbid feature of the malady, though it is often slight and unobserved, but again, often so prominent as to place the case in the melancholic variety of insanity. A better name than hypochondriasis is manifestly wanted, as also a due connection of all the symptoms with the mental defect, so that the cases can be treated scientifically and the nature and course of the disease mapped out. Unfortunately it is too plain that it is so closely allied to the higher types of mental perversion that its prognosis depends on uncertainty and its treatment is tedious and non specific.

Definition.—The above name is badly chosen, since it conveys an erroneous impression as to the seat of the disease. Neurasthenia, which is so often a leading feature, is also an indefinite name, since debility, referring particularly to the nervous system, is as much a symptom as debility from fever or general disease. The term indicates many obscure symptoms which result from nervous disease, and should be known as a symptom of cerebral affection and not as a disease in itself.

Ætiology.—This relates almost entirely to hereditary effects, which are mostly untraced and indefinite in the course of ages. A definite history of family insanity can be obtained in very many cases, or other mental peculiarities or eccentricities. In fact the definition of insanity as a perversion of the normal state of thinking, feeling, or acting, applies very concisely to this condition, though the perversion of thinking is often very slight and not much noticed by the sufferer; whereas in other cases the perversion of thought is highly accentuated and hypochondriacal fancies abound. There are frequently histories of epilepsy in other members of the family, as in an uncle or aunt, and other nerve disease, as neuralgia, hysteria, chorea, megrim, etc. The disease also occurs indirectly or in connection with other diseases, a primary instance being the effect of railway shock upon the mental action of one prone to this disease.

The disease often occurs in young adult life, the first symptoms being a slight dyspeptic attack or a trifling sensation over the stomach region, which the patient takes for dyspepsia. Ocular weakness often begins the disease, or peculiar sensations about the head or extremities. Spermatorrhœa also gives the patient a cause for complaint, when in reality the symptoms are due to the commencing cerebral affection. After this manner many slight and presumably local ailments are treated as if distinct, and indefinite names, as nerve exhaustion, spinal irritation, etc., are given to them.

The mental condition is unobserved, and these concurrent symptoms are found to be exceedingly intractable and obstinate of treatment.

Symptoms.—The term disease is very aptly filled in by this nerve derangement, since both mentally and physically the patient is without ease. The symptoms admit of no distinct delineation, since they vary in form, time, and course. A leading symptom is motor weakness, which has been mistaken as a special disease, since it often predominates and is necessarily much noticed by the patient. This symptom is also called nerve prostration or brain exhaustion, when generally the brain was not overtaxed. In fact this sign is often predominant in cases where no brain labor has occurred, and it is also unrecorded where, when, and how the nerve-tissue would give way under severe exertion.

Normally the brain acts without the cognizance of the body. In this mental affection the mind is painfully aware of its relation to the body, and feels its want of free

and healthy action. This morbid attention is a great source of annoyance to the sufferer, and, if free from this condition, the mere debility or neurasthenia would not be more wretched or prolonged than in any ordinary case of convalescence. The attention is also fixed on the sensory sensations or nerve currents passing through the body. From at first indefinite sensations in various parts a fixed attention occurs, causing uneasy sensations, foci of neuralgic pains, which are misconstrued into disease of organs situated near the painful spot. Even when these constant and annoying pains occupy the attention of the patient he is also aware of mental uneasiness. These pains are most common over the epigastric region, and around the lower ribs, on top of the head, in the mucous membranes, in the outer side of the limbs. They usually remain in the skin, though often the deep nerves are very painful to pressure. The motor nerves are also much affected. These normal nerve-currents are perverted in some way until great weakness results, flabbiness of muscle, and much want of power and endurance. The patient feels fearfully fatigued after trivial exertion. This is so often a very prominent symptom that it has received the name of neurasthenia; but it is sufficient to prove it but a symptom to remark that when the mind is easy and gay, or the patient's attention sufficiently diverted, that the sense of fatigue is forgotten; or again, the weakness is cured in a day, when the mental ailment of the patient is dissipated, and he feels like a new man. Belonging to the sensory phenomena are several lesser signs, as heat flashes in warm weather and cold thrills in winter; the hair often becomes rough and falls out, and even the skin chafes in places and becomes red. When the sensory sensations are not marked enough to cause neuralgia, the attention of the patient being called to them, according to his mental aspect, forms them into disease of the organs beneath. The mind being very diseased, hypochondriacal fancies arise, whereas if the patient is only depressed, the sensations act as a hyperæsthetic skin trouble, but none the less fix his attention and give rise to extreme annoyance. The loss of power he could tolerate, but the indefinite sensation is ever prominent and occupies his attention in spite of all his efforts.

The mental aspect of the case is probably more persistent than all the other symptoms, if it be not the cause of the entire nerve derangement. It would be difficult to say whether the mental perversion keeps up the morbid attention and brings about the motor weakness and sensory phenomena, or whether these disease the mind; but most likely they are effects of a morbid fancy, for almost all cases entertain erroneous ideas regarding their condition. If all neurasthenic cases were looked into, mental irritability, weakness, and evident mental distress would be found, though it were not developed into marked hypochondriasis, as it is in many cases. But since one set of symptoms, as the painful neuralgic feelings, are intensified at one time, and the mental ill or cloud at another, it is likely they are parts of the same brain change. They do not form a distinct chain of events, as in migraine, though frequently there are distinct remissions and intervals of improvement, the morbid condition lasting much longer than the interval of quiet.

The disease brings with it a long train of varying symptoms in the sensory, motor, and mental systems of the brain, and probably affects its entire mechanism rather than that the mental perversion should cause the concurrent symptoms. The obscurer centres of the brain are also affected—the heart often beats slowly and wants force and tension. The respiration often appears to the patient as if about to stop, and is painfully felt. The sympathetic system suffers, various vaso motor flushes and perspirations occur, dryness of the lips and alimentary canal, loss of appetite, and constipation. The kidneys often secrete much pale urine, and often a cloudy deposit of phosphates; sexual weakness is common, or much sexual irritability occurs The mucous membranes are often painful, neuralgic feelings attack the roof of the mouth, the anal region, etc. The voice is weak, and some patients notice a change in its character—it sounding not like their own. The mental aspect is very difficult to investigate. Some patients are distinctly hypochondriacal; some, as those instanced by Griesinger, even to insanity; others have very indefinite hypochondriacal ideas, the fancy often changing, and ever within the bounds of possibility; others do not interpret their sensations as disease, but complain of great weakness and annoyance. They believe themselves to be suffering from no delusions, but are restless, irritable, and a peculiar mental cloud teaches them that they are not themselves. They suffer from marked melancholia, avoid society, and are weary of life. The mind is depressed, though there is no false motion of disease. The patients are conscious of a foreign element in their existence. It takes possession of their motor, sensory, and mental life. They are restless and sleepless, fear things and persons—morbid anticipation is often very marked, and weakness of will to act. They are highly conscious of themselves. The memory is poor, for want of exercise. The foreign attention in despite of the patient's determination absorbs all his faculties. Concentration of attention to work is impossible. A hypochondriac, in the usual sense of the term, cannot be reasoned with, his morbid fancies absorbing all his attention, but in the less severe forms where advice is sought in reference to loss of nerve-power, painful sensations, etc., it is always well to carefully observe the mental aspect of the patient, since we must hope for a cure by acting on our knowledge of this mental state, and not on the athletic means which are usually prescribed for this class of patients, such as cold baths, etc., which strike not at the real disease, which is a chronic perversion of mind, marked by depression, accompanied with uneasiness of sensation, loss of power, and other nervous phenomena.

Treatment.—The treatment naturally changes with the character of the case. The hypochondriacal patient cannot be reasoned with. Those cases where perverted mental ideas predominate are difficult to cure, and run through years of treatment. The less serious forms, and the common form which is designated by the word neurasthenia, is best aided by means which aim at the mental cure of the case, rather than to try and tone up the physical loss of power. The course of the malady is always extremely chronic; the less mental derangement the sooner the cure. In many cases the mental "cloud" is so slight as to be almost unobserved by the patient, yet he finds when this depression brightens up that all the other symptoms lessen; the neuralgias cease, the loss of power returns, the patient seeks society. On this account the proper treatment would be to act on the perverted disposition, divert the patient's attention, etc. As in more protracted and usually insane cases, when the patient feels himself he is returning to health, so likewise in those less manifest and slighter cases, all the symptoms disappear when this feeling of nominal self returns.

It is evident that up to the present day no medicine is of any utility in cutting short this hereditary perverted action of the brain, which is so curiously allied to the more serious form of mental aberration.

The so-called nerve-tonics are of very little good, and often cause distinct harm. Arsenic often flushes the head and heightens the sensory irritability and hyperæsthesia of the skin. The stimulants make the mental thought more distressed, no hilarity occurring as in ordinary brain action. The carbon-compound remedies are useless toward a cure, but relieve the pain and give sometimes a shade of more natural and peaceful brain action and cheerfulness. Bromides and chloral relieve sleeplessness best, and the former continued for one year may do much toward a cure. Blisters or plasters applied to painful parts are of little service. The hot bath is pleasant before bedtime, but depends more on the patient's frame of mind than on any special efficacy, as indeed do any other drugs employed. The patient is perhaps better left without physic. The bowels take

care of themselves. The dyspeptic derangements are vastly exaggerated and probably depend entirely on superficial pains in the skin over the stomach region. Headaches are often constant, and also depend on the sensations in the sensory nerves in the scalp. The weakness of sight recovers itself. Massage is undoubtedly the best remedy for the motor weakness and sensory pains—the very rubbing drives, as it were, the pain to other parts, and gives agreeable relief and sleep. Massage continued judiciously for six months would probably cure any ordinary case of so-called neurasthenia if the patient is satisfied to wait till the developmental errors of his brain aright themselves.

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THE SUCCESSFUL TREATMENT FOR THE RESTORATION OF THE INJURED FEMALE PELVIC FLOOR.

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The consideration of the most successful treatment for the restoration of the injured female pelvic floor is of the greatest importance, not only to the specialist in gynecology, but also to the general practitioner. The dark and gloomy picture of ever-increasing suffering and misery entailed by the neglect of injury to the pelvic floor, in happy contrast with the bright picture of relief and cure by its proper restoration, is so common, so apparent to the eyes of all, that it is unnecessary for me to offer any plea for its performance; but rather, it is my object to elicit a practical discussion, to call forth the opinions of the many able surgeons who are readers of the Record, so that the pathway of duty may be clearer as to what is the quickest and best method for the cure of a condition whose import is among the greatest. In order to fully understand the importance of this lesion, and also to give the desired relief, it is absolutely necessary, first of all, to have a due appreciation of what constitutes the normal pelvic floor. A mitral regurgitant murmur will have but little significance to the student who as yet does not fully understand the normal heart-sounds; the stethoscope is faithful in transmitting both normal and abnormal sounds, but we must know the first before we can appreciate the second.

Relaxation of the pelvic floor may present no visible lesion, but its importance may be far greater than a lesion apparent to all. This can only be fully appreciated by a study of the normal pelvic fascia and muscles. Allow me to briefly mention a few of the more important structures involved in the pelvic floor. The pelvic fascia is attached laterally to the brim of the pelvis, anteriorly to the lower portion of the symphysis pubis, posteriorly to the spine of the ischium, and to a tendinous band, the white line, joining these points. At the white line the pelvic fascia divides into the recto-vesical fascia and the obturator fascia. The recto vesical fascia, arising from the white line, extends downward and inward, covering the levatores ani muscles, and uniting in the median line with its fellow of the opposite side, forms the true fascial floor of the pelvis. This fascial diaphragm is perforated by the rectum and vagina, to each of which it is attached and gives firm support. The fascial floor is the girder, acting as a framework for the support of the various organs and complicated venous plexuses. The pelvic veins are without valves, but by their exceedingly tortuous course overcome the force of gravity. In relaxation of the pelvic floor, injury affecting the fascia, the blood vessels lose their support, become straighter and at the same time more distended, thus increasing the weight in the pelvis and giving rise to the dragging, bearing-down sensation so common in patients suffering from lesion to the pelvic floor. The levatores ani arise anteriorly from the posterior aspect of the pubes, near the symphysis; posteriorly from the inferior and inner surface of the ischial spine, and between these origins from the white line that represents the point of division of the pelvic fascia, they extend downward and inward and are attached to the vagina, the rectum, to each other, and to the tip of the coccyx by a ligamentous insertion. These form the muscular floor of the pelvis. The only other muscles which have any special importance are the transversus perinæi, which arise from the tubero-ischii and are inserted in the median line at the junction of the levatores ani and the pelvic fascia. It is the function of the transversus perinæi to keep the pelvic fascia tense and assist in keeping the vaginal walls approximated; but in a lesion to the pelvic floor their normal action is apt to be perverted by retracting the torn ends, increasing the gap, and making a bad matter worse. The fascial tension is more or less lost, air enters and balloons the vagina, causing sogging of the vaginal walls, followed sooner or later by retroversion uteri, cystocele, urethrocele, rectocele, amd prolapse in its various stages.

Injuries to the pelvic floor may be incomplete or complete. Under incomplete we have two varieties: First, in which the fourchette or vaginal mucous membrane may or may not be torn, perhaps no visible injury; but there is submucous injury to the fascial and muscular floors causing relaxation of the pelvic floor. Second, in which the muscular tissues are injured and lesion visible. In complete laceration of the perineal body, the sphincter ani is ruptured; and possibly more or less of the recto-vaginal septum; the ends of the sphincter will be found widely distant according to the amount of the fascial retraction, due to the perverted action of the transversus perinæi; the vagina and rectum being thrown into one common passage according to the extent of the lesion of the recto-vaginal septum. The pelvic fascia is not elastic; if tension is made in one direction, compensation must be made in another direction, and when this is not possible, rupture is the result.

In a remarkable case I found the perineum a hard ligamentous mass; there was present a large recto-vaginal fistula, the anus being very patulous; on inquiry I ascertained that the child had been born through the anus. Injuries to the pelvic floor from the use of forceps usually begin externally, first rupturing the fourchette and then the deeper parts; but when unaided the injuries are apt to begin internally, and we may have the various fistulæ resulting, and finally the loss of the perineal body.

Another factor of great importance is that of subinvolution of the vagina, the normal process of retrograde metamorphosis being retarded, owing to laceration of the cervix uteri, so apt to accompany severe lesion of the pelvic floor. Here it is necessary to repair the injury to the neck of the uterus, and thus assist nature in restoring again the uterus and vagina to something like their normal condition before one is warranted in repairing the lesion to the pelvic floor.

In the treatment of these lesions we must naturally consider, first the incomplete and then the complete laceration of the perineal body. Each case requires its own separate and appropriate treatment; no set rule can be applied to all cases. After a careful study of the normal pelvic floor, each case will readily suggest its own proper treatment. I care not what operation is used, so that the operator fully understands the amount of lesion present, and by his method is able to restore as nearly as possible the normal pelvic floor. Above all errors, there is none more deceptive than that of producing a skin perineum. The patient has been subjected to the inconvenience of an operation, but her condition has not been one whit improved.

The repair of the pelvic floor cannot be learned from text-books; it must be seen to be fully appreciated and understood.

Again, the matter of diagnosis is sometimes obscure. I was called to see a lady suffering from incontinence of fæces; she had been delivered of a child three months

previous. Her family physician assured me there was no local difficulty; but on examination I found a complete laceration of the perineal body, also a tear up the recto-vaginal septum for fully an inch and a half, fully accounting for all of the patient's symptoms. On restoring the pelvic floor her disagreeable symptoms were at once cured. I may also add that in this case, as in many others, the baby was kept from the mother's breast for twenty-four hours immediately following the operation, and then again allowed to nurse; this is very important, as there is no agent more powerful to produce involution than that of nursing; it is nature's way of producing retrograde metamorphosis, and when this law is violated the patient invariably pays the penalty. When attending a case of labor always have your sutures ready for any possible lesion which may occur; having trimmed off any tags that may be necessary, the sutures can be readily and quickly introduced, for the parts are then benumbed; there will be union by first intention, a normal restoration of the pelvic floor, involution hastened, and the patient spared months or even years of suffering. In tying your sutures they should be snugly but not too tightly secured, and thereby avoid any difficulty from the tumefaction of the reparative hyperæmia; this applies to any period. Avoid multiplicity of sutures. Use as few sutures as possible consistent with the proper coaptation of the torn parts. I have seen twenty, thirty, and even still more sutures used in complete laceration of the perineal body involving the recto-vaginal septum. I have also seen failures which, I am fully convinced, were due entirely to the multiplicity of sutures. It is to be remembered we are dealing with erectile tissue, and with such a profusion of sutures how else can it be but that the circulation is disturbed; an interference with the normal action of the vaso-motor apparatus, and we have the classical symptoms, rubor, calor, tumor, dolor, and functiolæsa. The consequent abscess cavity is obliged to fill by granulation, and while it may not lessen the strength of the pelvic floor, it is decidedly annoying to the patient.

In preparing a patient for perineorrhaphy, especially in case of complete laceration of the perineal body, much of the success of the operation depends on the previous attention to regulation of diet and action of bowels. It is my custom to begin fully one week before the operation with regulation of diet. Three days before the operation, calomel, ipecac, and soda tablets, containing calomel, $\frac{1}{4}$ grain, are given hourly till one grain is taken. Two days before the operation several free movements of the bowels are secured by the use of Rochelle or Epsom salts; and the day before the operation the lower bowel is throughly emptied by enema. For fully twelve hours or more before the operation the bowels are perfectly quiet and remain so till three days after the operation, as will be described later when speaking of the after-treatment.

With the patient before you, anæsthetized and in the dorsal position, map out carefully the extent of the lesion, as indicated by the caruncles or scars; with the tenaculum picking up a point on the crest of the rectocele or central portion of posterior vaginal wall, and bringing it down to the topmost caruncles on either side as already noted, so that the slack of the posterior vaginal wall will be taken up and become slightly tense. Through this point in the posterior wall a suture can be passed and be useful as a guide during the operation, and then removed when sutures are in place. Beginning at scar on left side, denude a strip at edge of the vaginal mucous membrane, down along fourchette and up to scar on right side; then beginning again at same point on left side, denude a strip across the left angle to the point on the crest of the rectocele, and continue across right angle till end of first denudation on right side is reached. You have now mapped out before you the ordinary butterfly diagram. Still the borders denuded the intervening tissue can quickly be removed; in denuding avoid the vessels as much as possible, especially the venous plexuses; scissors and tenaculum being used in the denudation. If the scar extends up either angle, or there is marked relaxation, a triangular denudation should extend up the same. Small spurters can easily be controlled by the mere application of the artery forceps; but if a vein has been injured, it should be carefully ligated and clot removed. When completed, the denudation should be the same height on either side, and as nearly uniform as possible. In suturing I prefer the figure-of-eight suture, using heavy silkworm-gut and the Hagedorn gynecological needle, one-half or full curve. If the angle has been denuded, a figure-of-eight suture should be introduced, with the ends of the suture at base of triangle, then using two figure-of-eight sutures for the trefoil denudation.

Two sutures are sufficient for an ordinary laceration; if the angles are involved, then one for each angle. With the left index-finger in the rectum as a guide, the sutures should be buried as deeply as possible to catch up and bring together the torn or relaxed ends of fascia and muscle. Placing a small loop of thread on base of suture, it facilitates the removal of suture at end of eight days.

Silkworm-gut commends itself for the ease with which it can be made aseptic, and its lack of irritation to the surrounding tissues.

It is very rare to have pus from its use, and it gives but little pain to the patient. In securing the sutures, the limbs, which had been strongly flexed, are now brought forward, the knees being held tightly together. A tenaculum is placed in the angle at the base of the denudation, and downward traction is made, thus lengthening the denuded portion. The torn or relaxed pelvic floor is now brought together to its normal position, and by thus taking up the slack in the pelvic fascia, giving the blood-vessels their necessary support, it also soon assumes its normal condition. The successful performance of repair for complete laceration of the perineal body is one of the most difficult feats of plastic gynecology. All that has been said about incomplete laceration of the perineal body applies also to complete, with the exception that, beginning at the retracted ends of the sphincter ani muscle, careful denudation should be made about the rectum, down to, but avoiding injury of, the rectal mucous membrane. After the sutures already described are inserted, with the addition of a few transverse sutures if the amount of lesion is very large, last of all I unite the rectal mucous membrane, using a continuous suture of small-sized catgut and one-half curved needle with smooth, round point; having tightened my first layer of sutures, and the edges of the rectal mucous membrane being in perfect apposition, I then use a second layer, and even a third layer of sutures if necessary, bringing in surrounding tissues and strengthening the same; lastly, with the knees in the proper position, the remaining sutures are secured as already described. In both classes of cases the after-treatment consists in keeping the patient quiet on dorsal position, giving hot douches, using Küstner's glass catheter if patient is unable to urinate easily. No dressing is used on the perineum.

On second day after the operation, calomel, ipecac, and soda tablets are given as before operation, and on third day a saline cathartic is given. The first movement should be soft and liquid, and especially so in cases where the rectum has been involved: in those cases an enema containing glycerine and Epsom salts should be carefully given, using pressure with tip of syringe backward toward coccyx, thus avoiding the slightest tension on sutures.

Daily movements should afterward be secured by appropriate medication. Union by first intention is secured in these cases, and success will crown your efforts if the proper care is exercised. In the treatment of a case of complete laceration of the perineal body, just as much care should be exercised as in the treatment of a severe fracture. In the one we have exudate, in the other callus. In both cases it takes time and rest for

the parts to solidify and become strong. This should be firmly impressed upon your patient. Some surgeons prefer daily movements of the bowels immediately following the operation, by the administration of continued small doses of a saturated solution of Epsom or Rochelle salts. Others prefer constipation for a week or more, even using opium to accomplish the same. In the first instance the constant vermicular action is apt to prevent complete union; and in the second, the accumulated scybalæ are apt to do damage to the newly united tissue. The golden mean of Horace applies here as well as in many other cases. The object attained is paramount to the agency employed; whether you are the disciple of an American or a European, the speedy and thorough restoration of the injured pelvic floor is the goal, *par excellence*, to be reached. I am happy to state it has now reached a stage of development which insures not only relief and cure to the patient, but also a reasonable degree of satisfaction to our worthy leaders after their years of tireless exertion.

99 Huron Street.

THE SECRETION OF HYDROCHLORIC ACID BY THE STOMACH IN HEALTH AND DISEASE.

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According to Rollett and Heidenhain the difference between the gastric glands at the pylorus and the fundus consists in the fact that the former contain only small bright nucleated cells (Heidenhain's Hauptzellen = main cells), while the latter have, in addition, the spherical large cells adjoining the membrana propria (Heidenhain's Belegzellen = covering cells). Heidenhain ascribes to the main cells the formation of pepsin; to the covering cells, the formation of hydrochloric acid.

The elaboration of the gastric juice is divisible into two separate acts: the supply of the raw material by the blood to the points of secretion, shown by the vivid reddening of the gastric mucous membrane coincident with the beginning of the secretion; and the chemical transformation of a portion of this material into the specific constituents of the gastric juice by the gland cells.

The mere fact that an acid secretion is formed from the alkaline blood bears witness to the specific activity of the gland cells.

In what manner is free hydrochloric acid formed in the gland cells from the sodium chloride supplied by the blood? H. Schulz has shown that alkaline chlorides in watery solution are decomposed by carbonic acid, small quantities of free hydrochloric acid being formed. Since the blood circulating around the glands contains large amounts of free carbonic acid, the combined effect of this acid can liberate a small quantity of hydrochloric acid from the sodium chloride. As it is probable that the formed free hydrochloric acid is almost immediately expelled from the gland, the carbonic acid can again displace a small amount of hydrochloric acid and thus the process of transformation may continue. While the gland cells expel the liberated hydrochloric acid into the efferent duct of the glands of the fundus, the carbonate of sodium formed at the same time passes back into the lymph and blood-current (J. Munk).

Under normal conditions, as has been proved in the case of fistula, the mere contact of a foreign body with the gastric mucosa stimulates the secretion over a circumscribed area corresponding to the surface of contact. But the secretion occurring in consequence of the mechanical irritation is insufficient; it becomes at once more energetic and loses its circumscribed character if absorption, though it be only of water, takes place at the same time. The glandular activity becomes general over the whole of the stomach and assumes its normal degree when the organ contains nutritive fluids, which seem to exert a powerful influence on the secretion, probably in a reflex way. It is a well-known fact that the swallowing of the tube by sensitive individuals may be a sufficient stimulus for starting the secretion.

The first phenomenon which we can demonstrate in all normal gastric contents at the height of the digestive process is their acid reaction, which is due chiefly to the excreted hydrochloric acid and to a slight extent to the acid salts present in the contents of the stomach. At this period the acidity is greatest; it rises gradually to this point from the onset of digestion, and again slowly decreases. At the moment in which the gland cells are stimulated into activity by the ingesta the secretion of hydrochloric acid begins, and the latter at first forms salts or hydrochlorates with the inorganic and organic bases, giving rise to chlorides and hydrochloric albuminates. In testing these combinations litmus-paper will turn red, but free hydrochloric acid cannot be demonstrated. Sooner or later, however, saturation occurs, and as the glands meantime continue to secrete, free hydrochloric acid then appears, which reaches its maximum at the height of digestion and then lessens (Ewald).

After Ewald's test breakfast (a cup [⅓ litre] of tea and a roll weighing 35 gm.) the maximum of the secretion of hydrochloric acid coincides with the beginning of the second hour, and the hydrochloric acid secreted about this time amounts to 0.15 to 0.2 per cent; after a plentiful mixed diet the maximum of hydrochloric acid secretion ensues later. Although these figures are not invariable, they are so nearly correct that great deviations above or below them must be looked upon as pathological.

As opposed to the normal scretion of hydrochloric acid (euchlorhydria), we speak—1. Of an anomalous secretion of hydrochloric acid when we have to deal with a retardation or acceleration of the otherwise normal acid, that is to say, when the maximum secretion occurs much later or earlier than the time above given. 2. The secretion of hydrochloric acid may be diminished (hypochlorhydria. 3. The secretion of hydrochloric acid may be increased (hyperchlorhydria). 4. Hydrochloric acid may be completely absent (achlorhydria). 5. There may be combinations of the above enumerated anomalies of secretion.

If we bear in mind that disturbances in the secretion of hydrochloric acid (defect or access) may occur (*a*), when the quality of the blood is morbid, thus favoring or impeding the secretion of hydrochloric acid; (*b*), in disorders of the glandular apparatus in consequence of inflammatory processes, ulceration, etc.; (*c*), in central and peripheral disorders of the vago sympathetic system; (*d*), in combinations of the last-cited factors, we must agree with Boas, who states that an anomaly in the secretion of hydrochloric acid *per se* does not indicate with any degree of certainty the existence of a disease of the stomach.

The access or diminution of the secretion of hydrochloric acid is a symptom which indeed bears some relation to the different types of disease, inasmuch as some have a decided tendency to increase the secretion, others to decrease or suppress it altogether. But this takes place only to the extent in which the various morbid processes are associated with anatomical or functional disturbances which naturally cause an alteration in the production of hydrochloric acid; hence it is the degree of this factor in the morbid process which determines to what extent the secretion of hydrochloric acid is involved. Admitting that nowadays, owing to successively perfected methods of examination and daily increasing clinical observations resting on a strictly scientific basis, we are on a firmer footing in arriving at a correct diagnosis or in recognizing the indications for a successful treatment; yet it is true to day, more than ever, that only the most careful consideration and appreciation of all the symptoms developing in the course of the disease, aided by all the diagnostic auxiliaries, will make clear the nature of the affection we have to deal with.

When we consider the anomalies of secretion of the several diseases of the stomach we find in acute gastritis almost exclusively a lack of hydrochloric acid; the sour

eructations and vomiting in this affection are usually due to acetic, lactic, and butyric acids.

In chronic forms of gastritis we recognize above all the law of pathology, that chronic inflammations restrict or paralyze the specific activity of the respective organs. In those cases in which, despite the inflammatory condition of the gastric mucous membrane, there is hyperchlorhydria, the inflammatory symptoms are of a secondary nature, being merely sequelæ or concomitant phenomena of the over-production of the secreting apparatus due to other, usually nervous, causes. In such cases the hyperchlorhydria exists in spite of the partial lesion of a part of the secreting parenchyma, as the expression of an increased activity of the intact remainder (Ewald).

In simple chronic inflammation (gastritis chronica simplex) the hydrochloric acid is always diminished; in mucous inflammation (gastritis chronica mucosa) the hydrochloric acid is usually completely absent; in the atrophic form (gastritis chronica atrophicans) we note complete absence of combined and free hydrochloric acid, *i.e.*, of all the hydrochloric acid which is physiologically active. In the chronic forms of gastritis, too, we often find, in consequence of the formation of acetic, lactic, and other acids, eructations and rising of acid material which blunts the teeth and causes also a burning, scratching sensation in the course of the œsophagus, the so called heartburn or pyrosis; the latter sensation, if confined to the cardia, is also called cardialgia. The cases, however, which are associated with an intensification of the acidity of the normal gastric juice, *i.e.*, with hyperchlorhydria, and those periodical cases in which the acidity and quality of the gastric contents are normal, despite the symptoms of pyrosis, as shown by MacNaught,[1] should be, with few exceptions, included among the neuroses, as indicated above.

In atonic conditions of the stomach, as I have had occasion to prove,[2] we find the secretion of hydrochloric acid variable in accordance with the state of the gastric mucosa.

In dilatation, however, the chemical composition depends on the cause of the dilatation. In dilatation of the stomach, in consequence of cicatricial stenosis of the pylorus and atonic conditions of the muscular structure, we find almost exclusively a normal or increased amount of hydrochloric acid in the contents of the stomach. The hydrochloric acid may vary in the same patient on different days despite an unchanged diet. In dilatation of the stomach we not rarely find the condition called continuous acid hypersecretion, in which the stomach, after being emptied in the evening, contains the next morning often considerable quantities of fluid charged with hydrochloric acid, a point to be discussed hereafter. All this shows that the stagnation of the gastric contents exerts no perceptible influence upon the secretion of the gastric mucosa, as long as its secreting elements in general are preserved.

The diagnosis of ulcer of the stomach seemed to gain greatly in certainty by the fact that it was thought an excessive formation of acid could be demonstrated as a constant symptom. The credit of having first emphasized the occurrence of an increased secretion of hydrochloric acid belongs to Riegel. Ewald declares: In ulcer of the stomach the gastric juice always contains hydrochloric acid, often excessive in amount. More recent experience, however, has proved that while hyperchlorhydria is frequent in ulcus ventriculi, it is by no means constant.

V. Korczynski, and Jaworski, too, found in some cases also an untimely—*i.e.*, occurring in the empty stomach—so-called continuous acid hypersecretion. Removal of the contents of the stomach will show that such acidity disturbs the digestion, the protolytic being rapid and complete, the amylolytic slow and defective; in other words, all the meat is often well digested, while of the starchy matters a greater or less residue is found. Golding-Bird[1] first described the state of the hydrochloric acid in a case of cancer of the pylorus with dilatation. Kussmaul and his pupils, however, were the first to treat this question methodically, and have shown that in the large majority of cases of gastric cancer free hydrochloric acid is absent, although such absence in this disease has no specific importance and possesses merely the value of a secondary symptom. More recent investigations have disclosed additional no less interesting points. When the carcinomatous new-formation occupies a small region, and the associated inflammation of the gastric mucosa is slight, the secretion of hydrochloric acid may continue to be sufficient; a possible subsequent lack of hydrochloric acid may be the result of the slowly developing cachexia. When the carcinoma springs from the bottom of a gastric ulcer, there may be at first even normal secretion of hydrochloric acid, or perhaps hyperchlorhydria. In the majority of cases, however, as stated above, there is not only an absence of free hydrochloric acid, but also of that loosely combined with salts. Yet this lack of hydrochloric acid does not depend upon the carcinoma *per se*, but on the associated catarrhal inflammation or the atrophic condition of the gastric mucosa.

Ewald describes a case which proves that when the cancer is localized and the mucosa intact the secretion of hydrochloric acid may continue until a short time before death. In this case carcinoma developing on an ulcer could be excluded.

While some authors look upon hyperchlorhydria and hypersecretion as an anomaly of secretion in consequence of organic lesions, and only in a small number of cases as a neurosis, Ewald, among others, maintains that in most cases, excepting those above enumerated, we are dealing with a pure neurosis of secretion. In the succeeding sentences I am following mainly Ewald's deductions. This author looks upon hyperchlorhydria and hypersecretion of the gastric juice as a sensory neurosis of the secretory sphere. Of these two conditions the hyperchlorhydria, which must be strictly separated from hypersecretion, consists in an increase of the normal hydrochloric acid secretion, this excessive activity being due to the irritation of the ingesta. Van Norden found hyperchlorhydria as a primary neurosis, *i.e.*, independent of an organic lesion, in melancholia; Jolly, in hysteria. It occurs temporarily as a reflex phenomenon after gall stone colic and renal calculi.

Hypersecretion or parasecretion, Reichmann's "Magensaftfluss," is divided into the acute or periodical, and the chronic or continuous form. The former occurs, as a rule, without increased acidity. It appears periodically, usually after eating, rarely on an empty stomach, but seems to have no direct connection with the introduction of ingesta. The condition is a functional disturbance of the nerves of the stomach, which occurs independently or as a local symptom of other neuroses.

In chronic hypersecretion there is a continuous formation of gastric juice, which is usually excessively acid, so that even the empty stomach contains larger or smaller quantities of a fluid which may vary greatly in the contained free hydrochloric acid, but whose degree of acidity is always increased. In this condition, too, while the tongue is remarkably clean and the appetite good, we find, as a consequence of the irritation due to the acid fluid, heartburn, gastralgia, etc., which troubles disappear temporarily after an albuminous diet, contrary to the pyrosis resulting from acid fermentation, in which albuminous diet has no ameliorating effect.

There is also a nervous anacidity (anachlorhydria) of the gastric juice in hysterical and neurasthenic patients in whom, therefore, an organic disease of the stomach can be excluded.

The relations between the secretion of gastric juice and the diseases of other organs of the body have an

[1] Medical Chronicle, January, 1885.
[2] Atony of the Stomach, MEDICAL RECORD, March, 1894.

[1] London Medical Gazette, 1842, vol. ii., p. 391.

importance which must not be underestimated, for there is hardly any internal disorder in which gastric digestion is not largely implicated and associated with functional disturbances. This subject is so extensive that I must dispose of it here in a few words.

In diseases of the heart, lungs, and liver it is mainly the circulatory disturbances which lead to symptoms of congestion and their sequelæ, chronic catarrhal conditions of the gastric mucosa.

Diseases of the heart *per se* have no influence on the secretion of hydrochloric acid; it is the chronic catarrhs resulting from congestion which cause a diminution of the secretion of hydrochloric acid.

In diseases of the nose I have made investigations with the muco-purulent masses from a purulent rhinitis and have found that the digestive power of an active gastric juice is weakened by the addition of such nasal secretions; small amounts of hydrochloric acid may thus be neutralized when the secretory activity is depressed.

In chronic diseases of the lungs, in phthisis, emphysema, in chronic forms of bronchitis, etc., in which, as stated above, circulatory disturbances and their consequences come in question with reference to their influence on the secretion of hydrochloric acid, it depends entirely on the extent of the anatomical and functional disturbance present in the concrete case to produce a corresponding effect on the gastric glands.

Hildebrand found that the absence of hydrochloric acid in phthisis coincided with the rise of temperature. As regards diseases of the kidney[1] Fenwick proved that in chronic renal diseases the gastric mucous membrane likewise excretes urea, and that the latter during the process of elimination irritates the mucosa of the stomach and leads to catarrh, with consequent diminution of hydrochloric acid. Bernacki found that during oliguria and œdema the diminution of hydrochloric acid was greater than after the re-establishment of the urinary secretion and the disappearance of the œdema; as the quantity of urine increased, so did the hydrochloric acid.

As regards the disturbance of hydrochloric acid secretion resulting from diseases of the sexual organs, E. Fleischer found diminution of the acid during menstruation. Recently I treated a neurasthenic patient who was attacked after nearly every coitus with nausea and gastralgic pains, sometimes associated with vomiting; the vomited matters always contained excessive amounts of free hydrochloric acid.

Rosenheim found in a number of diabetic patients a temporary absence of hydrochloric acid which he interpreted as a neurosis; in other cases he found the hydrochloric acid constantly absent and ascribed the condition to an atrophy of the glandular apparatus.

In anæmia and chlorosis the activity of the gastric glands suffers in consequence of defective blood supply; but there are cases enough in which the secretion of hydrochloric acid is normal or even excessive.

Lastly, with reference to the secretion of hydrochloric acid in malaria, I have found among fifteen cases of masked malaria—further details will be given in another place—nine in which the hydrochloric acid was diminished, while lactic acid was markedly increased.

In conclusion, I shall give the shortest methods for the qualitative and quantitative determination of hydrochloric acid. By means of Congo paper we ascertain whether any free acid is present in the filtered gastric contents; paper impregnated with Congo red becoming violet in the presence of acids. To determine free hydrochloric acid we employ Günzburg's reagent and mode of procedure. The reagent consists of phloroglucin, 2; vanillin, 1; alcohol (eighty per cent.), 100 parts. Of this solution we place one or two drops in a china saucer and add one or two drops of the stomach contents to be tested. If free hydrochloric acid is present, a carmine red ring forms at the point where the two fluids meet when the saucer is carefully heated.

[1] Virch. Arch., Bd. xviii.

For the quantitative determination of hydrochloric acid Leo's method is the most reliable:

Any present organic acids having been determined and removed, 10 c.c. of the filtered stomach contents are mixed with 5 c.c. of a concentrated solution of calcium chloride ($CaCl_2$) and its acidity is determined. Then 15 c.c. of the filtrate are mixed in a dry vessel with dry chemically pure powdered calcium carbonate ($CaCo_3$), and after stirring are run through a dry filter. Of this filtrate 10 c.c. are measured off, and air is passed through to drive off the carbon dioxide (CO_2); then 5 c.c. of calcium chloride ($CaCl_2$) is added and the filtration is repeated. The difference between the first and second filtration shows the physiologically active hydrochloric acid.

776 Madison Avenue.

Progress of Medical Science.

Putrefactive Gases as Predisposing Agents in Typhoid Infection.—Dr. Alessi has made experiments which throw some light upon this subject. Rats, guinea-pigs, and rabbits were confined in boxes with perforated bottoms, and these boxes were then placed over open privies or cesspools, or over receptacles containing the evacuations of the animals. Notwithstanding that they continued to eat well, the animals lost their liveliness, and gradually pined. They were inoculated in this state with a small dose of typhoid bacillus, with the result that they died in twelve to thirty-six hours. The examination showed signs of hæmorraghic enteritis, swollen Peyer's patches and spleen, and typhoid bacilli in the blood, liver, and spleen. The same dose had no effect upon the majority of the control animals; only a few showed slight symptoms of illness, and one died. These experiments go to show that animals are rendered highly sensitive to the typhoid bacillus by previous inhalation of the gases of putrefaction. Alessi next investigated the isolated action of the various gases produced in putrefaction, to ascertain if any one were capable of creating the predisposition referred to. The result was in each case negative. The same held good as regards certain mixtures of these substances.—*Centralblatt für Bakteriologie.*

Toxicity of Scalded or Burnt Tissues.—In 1880 Lesser made some experiments to ascertain the effects of injecting the blood of a burnt animal into a healthy one. He seems, however, to have succeeded only in producing certain functional disturbances, never a fatal effect. Vassale and Sacchi followed a similar line of investigation, and studied the effect of extracts of parts actually burnt or scalded, and of the non-affected parts of the same animals, on healthy animals of the same or allied species. Their researches show clearly that the juice of parts burnt has a much more toxic effect on animals of the same species than that of the non-burnt parts of the same animal. This last juice, in its turn, has a toxicity much greater than that of the juice taken from corresponding parts of a healthy animal, which is, in fact, harmless. All the juices from a burnt animal are highly toxic, and generally produce lethal effects whether injected hypodermically or into the veins of normal animals. The chief pathological effects produced were marked subserous hemorrhages, in one case especially marked in the duodenum. Filtration through porcelain somewhat diminishes but does not destroy the toxicity of the juices; boiling, however, renders them innocuous, which lends support to the view that the toxic principle is an albumose, or some substance coagulable by heat. These results are of interest as bearing on the mode of production of the after effects of burns, attributed by Foá, as early as 1881, to a process of autointoxication. Not long ago Kianitzin (*Ann. di Chim. e di Farmacol.*, 1892) examined the blood, organs, and urine of animals suffering from burns, and by Brieger's method obtained a substance from them which was not

to be found in normal animals similarly treated. When injected into normal animals it produced torpor, somnolence, reduction of temperature, slow, shallow respiration, diarrhœa, and death. The necropsy showed nothing but hyperæmia of the brain and kidneys. This substance was classed by its discoverer with muscarin, neurin, and peptoxin. More recently Reiss (*Archiv für Dermatologie und Syphilis*, i., 1893) studied the effects of subcutaneous injection of the urine of patients suffering from burns. Such urine was very toxic, and it was found that it owed its properties to the presence of bases of the pyridin group. In cases of severe burn he recommended the speedy removal of the sloughed parts so as to minimize the absorption of poisons formed in the lesion. Vassale and Sacchi are of a similar opinion. They also recommend the employment of every possible means—such as keeping the burnt limb as low as possible, and the application of bandages—of preventing the too rapid absorption of the degeneration products, the toxicity of which they have so fully established.—*The British Medical Journal.*

The Nephritis of Typhoid Fever.—In a recent article on this subject by M. Léonce Bodin, the author remarks that the forms of nephritis that supervene during the course of typhoid fever are well known clinically (*The New York Medical Journal*, August 11, 1894). They occur most commonly in patients affected with the classical form of dothienenteritis, with high fever, diarrhœa, rose-spots, tympanites, enlargement of the spleen, and a more or less pronounced typhoid condition. The renal accidents usually make their appearance during the course of the second week. Albumin appears suddenly and more or less abundantly in the urine, and its appearance is accompanied by general phenomena of variable intensity. When these phenomena are violent, as sometimes happens, they deserve the name of acute uræmia, being accompanied by almost complete suppression of urine and by œdema, and almost always terminating fatally by convulsions or coma. In another form they are less violent, but they are always grave. There is blood in the urine, which is diminished in amount, and the uræmic phenomena are less intense. Finally, and more frequently, still less severe derangements are observed, characterized especially by an aggravation of the general condition, by dryness of the tongue, by pains in the loins, by headache, and by the appearance of a slight amount of albumin in the urine. It is particularly in this third form, happily the most frequent, that there is especially to be observed an exaggeration of the symptoms proper to the typhoid fever, but with a very clear renal character easily recognizable. In these forms of nephritis microbes are generally found in the urine, or, but much more rarely, in sections of the kidneys. Ordinarily they are micrococci, with or without the bacillus of Eberth, streptococci, and staphylococci, the last-named being far the most common. As these microbes are habitually found in the intestinal canal, it is very probable that they gain entrance into the blood through the intestinal ulcerations, which are an open door to all secondary infections; consequently, these cases of nephritis of typhoid fever are most commonly cases of secondary nephritis.

But typhoid nephritis may present various guises, and the case reported showed very special characters in its evolution, so that it seems to the author to be an example of a particular class of cases, both clinically and bacteriologically. The patient, twenty-three years old, was a night nurse employed in the Trousseau Hospital. She was admitted into the Saint-Antoine Hospital on June 1st. For about a week she had suffered with progressive loss of strength, great lassitude on the slightest exertion, invariable fatigue on rising, progressive and persistent impairment of sleep, and continuous headache which resisted antipyrine. She had lost her appetite and had vomited a few times, but had no diarrhœa or bleeding from the nose. On examination, the abdomen was found soft and not distended; there was no gurgling in the iliac fossa or pain anywhere on pressure; the tongue was lightly coated and pale, but neither red at the tip or at the border nor tremulous. There were no rose-spots on the abdomen. After a minute search two or three doubtful eruptive spots were found on the back, between the shoulder blades and on the lumbar region. The spleen seemed somewhat enlarged. The temperature was 102.1° F. in the morning and 104 2° F. in the evening. The lungs were normal, and the patient's general condition was good—she had no stupor, but slight prostration. The urine was normal. After hesitating between influenza and typhoid fever, the latter was diagnosticated. On June 5th it was noted that during the night the patient had vomited abundantly and that the matter vomited was greenish; also that her general condition was aggravated and that there was some stupor, with severe headache, lumbar pains, and dryness of the tongue. The urine was of a deep red color and contained a notable quantity of albumin. The temperature, which had at first been kept down with quinine, had now risen to 104.3° F. Baths of the temperature of 66° F. were prescribed every three hours. On the 6th many red blood-corpuscles were found in the urine, also blood-casts and epithelial *débris*. Albumin was found in the urine until the 25th, after which it was present only as a slight trace for a day or two and then disappeared definitely and the patient was in full convalescence. M. Bodin calls attention to the fact that during the whole course of the disease at no time were the ordinary abdominal and pulmonary symptoms of typhoid fever observed, only a moderate prostration during the early days. The temperature curve was that of typhoid fever of medium intensity, but the onset of the symptoms of nephritis had been very definite and had impressed upon the disease a particular aspect. The small amount of albumin found in the urine and the absence of oliguria, save at the outset, are to be contrasted with the very decided uræmic phenomena present from first to last.

The bacteriological examination of the patient's fluids was made as follows: Beginning with June 6th, the urine was collected every second day, examined, and inoculated. On three occasions the blood from the spleen was inoculated. The urine was removed from the bladder with a sterilized metallic catheter after a thorough cleansing of the vulva and meatus urinarius with soap and a solution of corrosive sublimate. The urine, received into sterilized tubes, was placed on a centrifugal machine and cultures were made in gelose, gelatin, or bouillon directly from the deposit thus obtained. The blood was taken from the spleen by means of a Roux's syringe boiled for an hour, and after previous disinfection of the skin over the spleen. It was ascertained that from beginning to end the urine contained a very great abundance of bacilli having all the characteristics of the Eberth-Gaffky bacillus. The existence of this bacillus exclusively in the urine is considered remarkable by the author, for most commonly in analogous cases there are numerous associated microbes, especially staphylococci. Furthermore, from the complete absence of the ordinary intestinal symptoms of typhoid fever, he thinks it probable that in this case the intestine was but slightly if at all affected, so that there could not have been a secondary infection by the microbes which are ordinarily found in the alimentary canal. The author hazards the hypothesis, which he confesses is somewhat forced, of a primary nephritis from infection with the Eberth bacillus, or nephro typhus accompanied by a general condition and a temperature curve resembling those of typhoid fever without any of the usual symptoms of typhoid fever pertaining to the alimentary canal, the lungs, etc. Granting this to have been the case, the Eberth bacillus would have acted in this case as the pneumococcus acts in certain kinds of amygdalitis in which the thermometric curve and the general condition of a frank pneumonia are observed without the slightest local sign of pulmonary inflammation.

Clinical Department.

FOUR CASES OF RETINITIS FROM CHRONIC DIFFUSE NEPHRITIS.

By DAVID WEBSTER, M.D.,

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CASE I.—Mrs. E. R——, aged sixty-three, consulted Dr. C. R. Agnew and myself on December 2, 1879. She had had poor sight for many years, but could read until three months ago. During the last three months her sight has deteriorated rapidly.

R. V. = $\frac{20}{100}$; no improvement with glasses.

L. V. = counts fingers at one foot.

Ophthalmoscopic examination shows incipient cataract of both eyes. The right has a large plaque of retinal exudation in the region of the macula. The left has neuro-retinitis with numerous hemorrhages of various sizes and shapes scattered all over the fundus.

All the urine Mrs. R—— passed in twenty-four hours was sent to Dr. E. A. Maxwell for examination. Dr. Maxwell reported as follows: 1, Medium and broad hyaline casts; 2, epithelial and granular casts; 3, no albumin; 4, low specific gravity; 5, large quantity of urine. Chronic diffuse nephritis.

CASE II.—June 25, 1880. James W——, aged sixty-eight, manufacturer and merchant, married, never saw well in the distance. He can read at the ordinary distance without glasses. For the last two or three weeks his eyes have failed in reading and he has seen motes and black threads and dark spots floating before them. He has had no pain in his eyes and no headache. He has been troubled a good deal with dizziness on stooping or on suddenly turning his head. He has had a cough for four or five years, and is weak and short of breath.

R. V. = $\frac{20}{100}$; $\frac{20}{50}$ with $-\frac{1}{36}$.

L. V. = $\frac{20}{100}$; $\frac{20}{30}$ with $-\frac{1}{18}$.

As his pupils were very small that of the right eye was dilated by means of an atropine wafer, to facilitate ophthalmoscopic examination. We found floating bodies in the vitreous and minute clusters of changes in the retina at the posterior pole of the eye.

June 26th.—Since the atropine wafer was put into the eye there has been smarting and sensitiveness to light. His bowels are perfectly regular. Ordered iodide of potassium, gr. v. *ter in die*.

On June 30th his urine was examined by Dr. E. A. Maxwell, who reported as follows: 1, Concentrated urine; 2, no albumin nor sugar; hyaline, hyaline and granular casts, medium and narrow, six to eight on a slide; 4, yellow, finely granular, tubular epithelium; 5, altered blood-corpuscles, scanty; 6, spermatozoids, scanty; 7, oxalate of lime. Chronic diffuse nephritis, granular contracted kidney, general or localized.

Examination of a second specimen four days later gave similar results.

CASE III.—September 17, 1880. John T. R——, aged sixty eight, married, says that he did a great deal of writing last February and from that time till five or six weeks ago he had a great deal of difficulty in reading, and since that he has not been able to read ordinary print at all. He comes up stairs with difficulty, due, he says, to rheumatism, which he has had, more or less, since 1868. He had it very badly at one time, but was never laid up in bed with it. He has been, for two or three weeks at a time, so crippled with it that he had to crawl up stairs and slide down. He has a poor appetite, and dizziness, and constipation, the latter for the last two years. He seldom takes physic, however.

Ophthalmoscopic examination shows peripheral opacities in the lower parts of both crystalline lenses. There are old corneal opacities of the right, and both have an astigmatic look. There are changes about the macula, and a large area in that region looks somewhat œdematous, or hazy. Both anterior chambers are markedly shallow.

R. V. = $\frac{6}{200}$; $\frac{20}{180}$ with $+\frac{1}{8}$.

L. V. = $\frac{20}{100}$; $\frac{20}{50}$ with $+\frac{1}{8}$.

A specimen of his urine, examined by Dr. Maxwell, shows: 1, Quantity and specific gravity normal; 2, medium and broad hyaline casts; 3, tubular epithelium; 4, pigmented bladder epithelium; 5, no albumin nor sugar. Chronic diffuse nephritis.

CASE IV.—February 25, 1882. Thomas A——, aged seventy-one, married, merchant, complains of a blur over his right eye with scintillations. He says he was always near-sighted. He is the victim of rheumatic gout, and his family physician says he has organic disease of the heart.

R. V. = $\frac{20}{60}$ with $-\frac{1}{6}$.

L. V. = $\frac{20}{60}$ with $-\frac{1}{15}$.

Ophthalmoscopic examination shows staphyloma posticum of both eyes, that in the right being very extensive. In the right eye there are retinal exudations occupying the whole macular region.

Dr. Maxwell examined his urine and found: 1, Light color; 2, low specific gravity (1017); 3, no albumin nor sugar; 4, abundant hyaline casts (10 or 12 on a slide); 5, scanty, altered tubular epithelium. Chronic diffuse nephritis.

It is worthy of remark that there was no albumin present in the urine of any of these patients. The diagnosis of chronic diffuse nephritis was based on the presence of casts, and other abnormal constituents of the urine.

A FEW WORDS IN REFERENCE TO CARYOCINETIC CHANGES IN THE RED BLOOD-CORPUSCLES.

By WILLIAM MOSER, M.D.,

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EVER since Luzet drew attention to caryocinetic changes in the red blood-corpuscle in infantile pseudo-leucæmia (Jaksch) the discovery has stimulated many to further research. It is well known that in the blood of infants nucleated red blood-corpuscles are common even in health. They are like a nucleus when at rest, round, and exhibit no property of caryocinesis. It is possible that it has this property, but it has not yet been demonstrated in healthy infants. In infantile pseudo leucæmia mitotic changes in the red blood-cells are so constant and occur in such large numbers that Luzet regarded it as characteristic for that disease, as a means of differential diagnosis from other forms of anæmia. If we have an infant with an enormously enlarged spleen, and by examination of the blood find large numbers of red blood-cells in process of caryocinesis we are justified in making a diagnosis of infantile pseudo leucæmia. But from a given specimen of blood without a clinical history the diagnosis cannot always be made, hence it is not characteristic for this disease. I base this statement from a specimen of blood taken from a case which was diagnosed as scurvy by Dr. Fuhs at St. Catharine's Hospital. The specimen showed the nucleus at rest, accessory nuclei, irregular shaped nuclei, the nucleus split in half, the rosette-shape, and large numbers in which the cells were filled with threads and dots; (chromatic corpuscles), as though the specimen had been "fixed" in Flemming's solution. The specimen was examined fresh and can be preserved as well as those which are "fixed" and stained. Askanazy recently reported a picture similar to the one described above in a case of pernicious anæmia. He saw caryocinesis and what he terms "karyolysis" (retrograde metamorphosis of the nucleus) in quite a number of the cells. In a fresh specimen he even saw different phases of caryocinesis in a single red blood-cell. The subject is in its infancy, and much may yet be demonstrated. The conclusion can be safely made that caryocinesis in the red blood-corpuscles is not characteristic for any given disease, and further research may prove it to be more common than we now regard it.

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infectious disease. The poison of grief is more than a name. To urge work, study, travel, the vain search for amusement, is both useless and dangerous. For a time the whole organism is overthrown, and temporary seclusion is imperative for proper readjustment.

After some bereavement the custom of wearing mourning has a distinct moral value. But its period of use must be brief: a few weeks, months, perhaps a year; otherwise dense black draperies become a burden, an æsthetic blunder, and a source of depression in themselves. For a time they have a place, securing consideration from strangers and silence from mere acquaintance, since sorrow is one of the touches of nature that makes the whole world kin.

When there is nearness of relationship to nature, rambles in the open air, days alone with the sea, alone in the forest, console as nothing else can. Quiet, silent drives, or even short journeys by rail, will reveal a new heaven and a new earth to one fatigued and worn by sorrow. Music, when it can be borne, has a soothing power beyond words. Books, too, have their place, those gentle companions without speech whose calm society helps annihilate time and space, and who always receive us with the same kindness. The familiar faces of newspapers and journals bring a stray comfort that even the tenderest heart is powerless to bestow. The care and companionship of children is another source of strength. Children are not watching to see how the afflicted are bearing up under sorrow, nor are they waiting for some expression of sentiment or the overthrow of self-control. A child is always the best comforter, uttering no word of sympathy, yet rousing interest in life because its nature is sweetness and light.

Grief cannot be ignored, neither can it be cheered up. It must be accepted, and allowed to wear itself away. Readjustment comes slowly. Sorrow, grief, and all great misfortunes should be regarded as conditions similar to acute infectious diseases, which they resemble in result; and later, as convalescence from such diseases. Seclusion, rest, sleep, appropriate food, fresh air, sunshine, interests that tax neither mind nor body, these are requirements in this class of illness. The care of the condition following depressing emotion calls for the same treatment in greater or less degree.

WATER-BAG BURNS.

It would scarcely be believed by one without subjective or objective experience in the matter that an ordinary rubber water-bag, filled with what usually passes for hot water, would be capable, when applied to the human skin, of producing an extensive and deep burn. All are familiar with this effect from the careless use of the hot water-bottle, and the surgeon seldom fails to see to it personally that a proper protection separates the glass from the skin. Conditions of shock, lowered vitality, faulty circulation, with exsanguinated and cold extremities are those in which heat is most often sought to be externally applied by this means, and it is just in these states of lessened power of resistance that the tissues are most apt to suffer. Since it is not so generally known that the rubber bag is possessed of decided powers for evil as well as for good, it may be well for the trained nurse, no less than the physician, to be reminded of it. At a recent meeting of the New York Dermatological Society the question was brought up for discussion by the report of a severe burn with deep destruction of tissue extending through the subcutaneous fat. An operation had taken place, and the water-bag had been applied to the feet while the patient was still under the anæsthetic. Several of the members present at the meeting had been consulted in similar unfortunate accidents, and as these are just the cases which sometimes cause patients to think they have grounds for legal redress, a note of warning may cause us, conscious of having done no harm ourselves, to feel beneath the covers and make sure that the nurse is allowing none to be done.

THE CURE BY FAITH.

New Jersey has ever had an enviable reputation for fair-dealing and quick justice. It is seemingly hard upon the young New York doctor when the heat of July beats down upon this side of the Hudson that he cannot freely transpose the seat of his usefulness to Asbury or Spring Lake without prolonging his journey to Trenton and his agony in a three days' strict "Exam." The justice comes in when the quack, driven from our inhospitable shore seeks to find a lodge in the vast wilderness of Jersey City Heights.

The struggle to maintain the State's medical rights, in the first place for Jersey physicians, and secondly for those who are reputable, is beginning to show signs of succeeding. An indictment has just been found against a faith-curist, who is to be tried under the new law, passed through the efforts of the State Medical Board of Examiners, making it a misdemeanor for any faith-curist or mind-healer to practise in the State.

We do not take it that the Board denies the value of faith or the great influence which may be exerted upon disease by mental processes. They have, however, started out to see to it that whoever wishes to engage in the healing of the sick must show himself to be properly qualified. Once the examination passed, the successful candidate may employ faith, hypnotism, or any other form of mind influence alone, if he and his patients prefer it to the usual way of giving it mixed with drugs.

The trial about to take place should attract some attention, being the first since the act went into effect, and it is said will be fought on the ground that it is not constitutional.

An Order of Medical Monks has been founded in this city in connection with the Episcopal Church. The object of the order is thus expounded by Father Johnson: "The text of the order," he said, "will be 'Heal the sick, and say unto them, The kingdom of God is come nigh unto them,' taken from St. Luke x. 9." The order was the idea of Mr. Davidson. It is the intention to found an order of medical monks, who will be connected strictly with the church, and who will devote their time to the poor and sick of the parish. The only compensation which the members of the order will receive will be what the parishioners can afford to give them. The members of the order will rank as deacons in the church. There are at present two novitiates, of whom one is a trained nurse, the other a medical student.

News of the Week.

Unveiling of the Sims Monument.—The ceremonies of the unveiling of the statue of Dr. J. Marion Sims will be held at 3 P M. on Saturday, October 20, 1894, in Bryant Park, New York (Forty-second Street and Sixth Avenue). Addresses will be delivered by Drs. George F. Shrady and Paul F. Mundé, after which the statue will be formally presented to the city of New York, on behalf of the medical profession of this and other countries, and will be accepted for the city by Mayor Gilroy. The medical profession and public are respectfully invited to be present.

Soon after Dr. Sims's death, in 1883, the movement for the erection of a bronze statue was set on foot by the MEDICAL RECORD, and the necessary funds were subscribed by members of the medical profession in this and other countries. American sculptors were at first asked to compete in a design for the work, and when all the designs submitted were rejected by the committee having the matter in charge, the commission for the statue was awarded to Müller, of Munich.

The House-warming of the New Bloomingdale Asylum.—The patients of Bloomingdale Asylum were recently transferred from the old site on Harlem Heights—which had been occupied for almost three-quarters of a century—to the new institution near White Plains. The removal was made by easy stages, and without unpleasant incident. The new establishment being in running order, invitations were recently issued to members of the profession likely to be interested in this line of medicine to inspect the new building. A large number of New York physicians accepted the invitation, and were shown through the institution last Wednesday afternoon, and pleasantly entertained by the officers of the Asylum. The new Bloomingdale is located just on the outskirts of the village of White Plains. The main building stands on a broad hill-top, commanding a fine inland view. It presents a very pleasing exterior, with little of the prison-like aspect that usually characterizes asylum buildings. Within, its appointments are all that intelligent study of the prominent asylum plants in the world, backed by abundant means, could make them. The building is fireproof throughout, and the utmost attention has been given to its sanitary features. It is supplied with water from springs on the Asylum property. The sewage system connects with that of the neighboring village. The Asylum has its own electric plant, ice machines, and the like. A special feature of the institution is that most of the peculiar advantages of the cottage system of architecture are secured without the sacrifice of the conveniences of the linear system. The entire main building may be said to be under one roof, inasmuch as closed corridors connect its various sections, yet these sections are, for most practical purposes, independent and detached buildings. One section of each wing has been especially constructed for hospital wards. In a word, nothing has been omitted that could help to make the new Bloomingdale strictly up to date in all its appointments, and the peer of any asylum plant in the world. The credit for its many excellencies is very largely due to the Medical Superintendent, Dr. Samuel R. Lyon, who for many years has made hospital construction a special study, and who drew the original plans for the new Bloomingdale, and directed and supervised the work of construction with unremitting energy. Whatever differences of opinion may exist as to the ideal plan for an asylum, it must be conceded by everyone that Dr. Lyon has succeeded in combining the best features of the various systems to a remarkable degree in the New Bloomingdale.

Dr. Charles H. Pinney, of Council Bluffs, Ia., died from injuries received in a railroad accident, near Lincoln, Neb., on August 9th. He was Professor of the Principles and Practice of Medicine in the Medical College of Council Bluffs. During the Civil War he served as surgeon in the Ninth Ohio Cavalry. Dr. Pinney was fifty-two years old at the time of his death.

The State of Connecticut is agitating the question of establishing a State Commission in Lunacy. "Don't."

Dr. Stuart Douglas, resident physician for the insane at Bellevue Hospital, died on October 14th, of Bright's disease. Dr. Douglas went to Alexandria, Va., about six weeks ago to attend his father's funeral, and when he returned to this city he complained of feeling ill.

Dr. Douglas was born in Alexandria thirty-three years ago. His early youth was spent at Leesburg, Va. He is a graduate of the academic and medical departments of the University of Virginia, and came to this city in 1881, taking a post-graduate course at the College of Physicians and Surgeons. He was appointed to take charge of the insane at Bellevue on October 26, 1887, and was the only salaried physician at the hospital. Dr. Douglas was a member of the Southern Society, the American Academy of Medicine, and the Society of the Alumni of Bellevue Hospital, and Instructor in Mental Diseases in the Post-Graduate Hospital. The last piece of work that he did was the writing of an article on "The Treatment of Melancholy" which appeared in the *Post-Graduate*.

Skunks and Typhoid Fever.—The skunk farm and typhoid fever epidemic are two of the unpleasant things with which the residents of Beadner, Wood County, O., are now contending.

The Decreasing Death rate.—A statement prepared by the Health Department shows that the death-rate of this city has been lower this year than since 1884, though then it was low as compared with the average of the preceding years. Moreover, the number of deaths, says *The Sun*, has been less actually than in any year since 1890, though meantime the estimated population of New York has increased by more than a quarter of a million, or from 1,705,980 in 1890 to 1,957,452 in 1894. If the mortality for the remainder of the year be the same as in the corresponding period of last year, the total for 1894 will be less than in 1893 by more than 2,500. The experience since January, and the present condition of the city as to health, indicate the probability that this is an overestimate of the mortality for October, November, and December, and that actually the total number of deaths in 1894 will be less than in 1893 by toward three thousand, or not much above the total for 1890, which was 40,103. This would make the death-rate, or the mortality proportionately to 1,000 in the population annually, about 21 in 1894, as compared with 23.51 in 1890.

Dr. John Y. McGay died on October 13th, at his home in Brooklyn, forty years of age.

Sir Joseph Lister.—It is proposed to present Sir Joseph Lister with a memorial on the occasion of his retirement from active work.

Doctors as Companions.—The following passage from Mr. James Payn's "Gleams of Memory," now appearing in the *Cornhill Magazine*, will be interesting to members of the medical profession: "Upon the whole, and for a 'scratch' companion, I prefer a doctor to a man of any other calling. He may not be very good as a conversationalist, but he is rarely very bad, like a cheroot. He has had a genuine experience of life, and has seen down to the depths of it; a sick man does not attempt to deceive his doctor, or put the best face on his character, as he does with a priest. Moreover, what is very unusual, your doctor knows more about you, professionally at all events, than you know about yourself. He does not tell you about it, it is true; not a word of that aneurism you carry about with you, and which will some day kill you in half a minute, but your consciousness that he may possess such knowledge makes him interesting. The best suggestions I have had made to me for plots for my novels have come to me from doctors, to whom I have also had cause to be grateful for many things."

The Perils of Football.—We have received from a correspondent, in reference to the fact that many serious accidents, and more than one death, have already, and thus early in the season, been reported from the football field, the following letter: "All lovers of football, both players and spectators, would rejoice if accidents due to football were of less frequent occurrence; and I feel sure that such would be the case if these suggestions were carried out: 1. Give the linesmen, as well as the referee, power to stop the play for a foul charge or hack. 2. Let the spectators desist from such cries as 'Pay him out,' etc. 3. Let the players wear tennis shoes, and not boots with steel plates inside the toes, as I know the modern boots are now made." We agree with our correspondent's first two suggestions, and go further. It has always been our cry—and we have been pleased to see it taken up and echoed approvingly by our contemporaries, medical and lay—that the strengthening of the authority of the referee, coupled with more drastic penalties for the wrongdoer, must be the most practical method of preventing accidents that arise not so much from the essential laws of the game as from "bad blood." And certainly such cries as "Pay him out" are the very things to rouse the evil spirit. Our correspondent's third suggestion is not so sensible. Firstly, nailed and steel-shod footgear is not permissible by the laws of the game; and, secondly, india-rubber soles would practically alter the game.—*The Lancet.*

The Attraction of Football for Intellectual Men.—In an article on the present state of college football, Professor E. L. Richards, of Yale, speaks of the attractions of the game for intellectual men as well as for the student of muscular science. He says, speaking of the relative attractions of football and other athletic games: "That the game has had attractions for intellectual men in the past is shown by the fact that the average scholarship of men on the football teams has of late years been higher than that of men in the other athletic organizations. In the years 1879 to 1888 the average standing of men not on athletic organizations was, on a scale of 4, 2.69; for members of the university boat crew the average was 2.52; for members of the baseball nine it was 2.41; for members of the football team it was 2.68. Track athletics were not in existence as an organization through the whole decade, but for the few years when there was a university team the average was 2.66. In the previous decade, 1869 to 1878, it is only fair to add that the average of the football men was slightly below that of the other athletes, it being 2.51 to their 2.56. I can only account for the fact of the rise of the average in the second decade by the change in the numbers of the team from twenty to eleven—a change giving opportunity for more skill, thus rendering the play more attractive to men of mind. Notwithstanding the present style of mass play, which puts a premium on physical strength and weight, it was a surprise to me to find that the average scholarship of the sixteen men from the academic department, including players and substitutes, was higher than the average of any class which ever graduated. I cannot believe, however, that the high scholarship of football players will always prevail, unless the style of the game be changed to one which admits of more open play. The present style of mass play and momentum play puts a premium on weight and brute force. The mingling men in masses make injuries more probable than in an open style of play. The mass play makes the game as little as possible a kicking game. It eliminates a great deal of the element of skill. Skill ought to be encouraged by setting some sort of premium on it. Increasing the number of points scored by a drop kick from the field might accomplish this somewhat. Some changes in the rules regarding 'interference' would do more. If, again, 'the warnings' for 'rough play' were entirely omitted, and the umpire were instructed to send a man off the field at the first offence, captains would train their men to avoid these plays entirely. Then the experts, in reforming the game, could not do better than turn their attention to the umpires. If a plan for training umpires could be devised it would be a good thing."

Philadelphia as a Medical Centre.—According to the Philadelphia newspapers that city is again asserting its right to special prominence as a medical centre. The census of the medical schools is as follows:

University of Pennsylvania,	875
Jefferson,	700
Hahnemann,	325
Medico-Chirurgical,	300
Woman's,	200
	2,400

Physical Culture in Unhealthy Schools.—There are one hundred and eighty sanitarily defective schools in Chicago, and the city spends about $4,000 annually on an athletic overstrain fad called "physical culture," whose chief purpose seems to be to provide "professional foreigners" of the ward-heeler type with an occupation. The money wasted on this "physical culture" humbug could be advantageously employed in remedying the sanitary defects of a few schools.—*Medical Standard.*

Reviews and Notices of Books.

Pain in its Neuro-pathological, Diagnostic, Medico-legal, and Neuro-therapeutic Relations. By J. Leonard Corning, A.M., M.D., Consultant in Nervous Diseases to St. Francis' Hospital, etc. Illustrated. Philadelphia: J. B. Lippincott Company. 1894.

As an aid to diagnosis in nervous disease the author considers pain unique in importance. The insomnia and melancholia induced by it are in themselves matters of serious moment. The special therapeutics of pain are given in detail and evince much conscientious research. This work is one of marked originality and careful thought. There is in it much to interest the general reader. In point of letter-press, binding, and paper, the book presents attractions that the student cannot fail to appreciate. The illustrations are clear, and add to the value of the text.

The Care and Feeding of Children. A Catechism for the Use of Mothers and Children's Nurses. By L. Emmett Holt, M.D., Professor of Diseases of Children in the New York Polyclinic, etc. New York: D. Appleton & Co. 1894.

This Catechism was originally designed for the pupils in the Practical Training School for Nursery maids, established in 1889, and compiled to meet the need felt for some simple manual. A series of questions and answers was made out, on matters of every-day practical observation and careful hospital work. The Catechism is now given to the public, with the hope that it may serve a useful purpose in other institutions, and be of value to mothers and to the ordinary untrained child's nurse. The essentials are strongly emphasized in the form of questions and answers. The first part, devoted to the care of children, treats of such subjects as bathing, eyes, skin, mouth, clothing, nursery, weight, weaning, etc. The second part deals with infant feeding. And the third is devoted to miscellaneous topics, as sleep, teething, walking alone, convulsions, colic, contagious diseases, etc. The advice given is excellent and perfectly clear, and goes over all the ground concerning which the doctor is so often questioned. If it could be followed by those who read, it is safe to say that disease in infancy would rapidly diminish and the happiness of childhood be greatly increased. Sixty-six pages of good advice are given, all for fifty cents. Less than seven inches long and about five wide, Dr. Holt's Catechism contains in most convenient form all the precepts of modern nursery orthodoxy.

Small Hospitals, Establishment and Maintenance. By A. Worcester, A.M., M.D.; and Suggestion for Hospital Architecture, with Plans for a Small Hospital, by William Atkinson, Architect. New York: John Wiley & Sons. 1894.

This is one of the subjects that at present occupies the public attention—the building and management of hospitals in small towns and villages. Dr. Worcester's book answers the questions that directly confront the promoters of such schemes for public welfare. In Part I. full directions are given for inaugurating the hospital and for arranging its management. Part II. is devoted to plans for buildings and hospital construction. While thoroughly up to date and embodying the best principles of such work, the book is not too technical for the general reader. The author realizes that much as the success of a hospital depends upon its medical and surgical staff, even more does it depend upon its nursing service. The best plan is to have the nursing service done by the student nurses of some training school, in order to secure ambitious, capable young women who are by nature fitted to undertake such work. There were no real trained nurses until some years after the war. It will be a great surprise to many to learn that in former times in Bellevue Hospital the nursing was intrusted to women who in the police courts chose a term of service as hospital nurses when the alternative of a term of imprisonment was given them! The book is earnest and well written, and the plans offer the greatest possible economy of space, together with convenience and harmony of design.

Diseases of the Skin. An Outline of the Principles and Practice of Dermatology. By Malcolm Morris, Surgeon to the Skin Department, St. Mary's Hospital, London, etc. With eight Chromo-lithographs and seventeen Wood-cuts. Philadelphia: Lea Brothers & Co. 1894.

The clearness of this book, together with its good illustrations, careful arrangement, and the practical clinical presentation of skin diseases that it gives, makes its probable destiny one of general and well merited popularity. All important schemes of classification are referred to, and that of Unna followed in the main, the author feeling convinced that whatever changes may come about in the manner of looking at diseases of the skin, increased knowledge cannot alter the principle upon which this is based. The chapters on pathology and diagnosis are remarkably interesting, the latter enunciating practical principles of definite value. Affections of the skin dependent on nerve disorder are next considered; then artificial eruptions, eczema (thirty-four pages), pityriasis, psoriasis, local inoculable diseases, general inoculable diseases, diseases of the skin-glands and epidermic appendages, new-growths, and malformations. In the matter of treatment, which is always possible and unusually practical, great stress is laid upon the care of the patient and his general condition, factors sometimes overlooked in the supervision of abnormal states apparently so definitely local as troubles with the skin. Of convenient size and easy to handle, Dr. Morris's book has everything to recommend it.

Handbook of Obstetric Nursing. By Francis W. N. Haultain, M.D., F.R.C.P. Ed.; Lecturer on Midwifery and Diseases of Women School of Medicine; Obstetric and Gynecological Physician Royal Dispensary; Examiner Royal College of Physicians, Edinburgh; and James Haig Ferguson, M.D., F.R.C.P. Ed., M.R.C.S. Eng.; Lecturer on Midwifery and Diseases of Women School of Medicine; Obstetric Physician New Town Dispensary; Examiner Royal College of Physicians; Late President Royal Medical Society, Edinburgh. Second Edition, Revised and Enlarged. With Thirty-three Wood Engravings. Philadelphia: J. B. Lippincott Company. 1894.

This is a well arranged handbook for the guidance of monthly nurses and midwives, written in clear and simple language, very neatly printed, and of convenient size. The authors are teachers who have had practical experience in the needs of obstetric nurses, and their book is one that can be recommended. The illustrations are instructive, and a good index facilitates reference.

The Jewish Method of Slaughter Compared with Other Methods, from the Humanitarian, Hygienic, and Economic Points of View. By J. A. Dembo, M.D., Physician to the Alexander Hospital, St. Petersburg; Member of the St. Petersburg Medical Society; Member of the Society for the Preservation of Public Health, etc. Translated from the German, with the Author's Amendments. London: Kegan Paul, Trench, Trübner & Co. 1894.

The basis of this book is the report of an investigation into the Jewish method of slaughtering animals, by cutting the carotids and other large vessels of the neck, undertaken at the instance of the Russian Societies for the Prevention of Cruelty to Animals. The author believes that such a method, used to-day we believe in New York, inflicts a minimum of suffering upon the animals, produces whiter and firmer meat, and, from the point of

view of the purchaser, is the more economical. His argument is well sustained, and certainly seems to prove his point.

INEBRIETY OR NARCOMANIA. Its Etiology, Pathology, Treatment, and Jurisprudence. By NORMAN KERR, M.D., F.L.S.; Fellow of the Medical Society of London; President Society for the Study of Inebriety; Chairman British Medical Association Inebriates Legislative Committee; Consulting Physician Dalrymple Home for the Treatment of Inebriety; Vice-President International Congress of Medical Jurisprudence; Corresponding Member Medico-legal Society of New York; Corresponding Secretary American Association for the Study and Cure of Inebriety. Third Edition. London: H. K. Lewis. 1894.

THIS book is well known, through its earlier editions, to the large and increasing number of medical practitioners who recognize in inebriety a disease, and not a vice, in the common acceptance of the word, worthy of the same serious study as any other physical or mental malady, and one that is, in many instances, amenable to cure through the institution of rational scientific treatment. By the term inebriety is not meant simply an over-indulgence in alcoholic liquors; the word is employed as an inclusive term for all forms of drug addiction, narcomania, the particular kind of intoxicant employed being accidental, determined by environment or other conditions. The author defines the word as meaning "a constitutional disease of the nervous system characterized by a very strong morbid impulse to, or crave for, intoxicants." Most inebriates long for alcohol because that is among us the narcotic in common use. The present edition of the work contains a large amount of matter not found in the former editions, including a study of ether addiction, at one time very common in Ireland; a dissertation on the place of alcohol in therapeutics; on the relation of insurance to inebriety, and on the criminal responsibility of inebriates. The book is interesting apart from the valuable lessons which it teaches, and we can thoroughly recommend it as a safe guide to this most important branch of medical science. The presswork is all that could be desired, and a complete index makes it a valuable work of reference.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE, DESIGNED FOR THE USE OF STUDENTS AND PRACTITIONERS. By AUSTIN FLINT, M.D., LL.D., late Professor of Principles and Practice of Medicine, Bellevue Hospital Medical College, New York. Seventh edition. Thoroughly revised by FREDERICK P. HENRY, A.M., M.D., Professor of Principles and Practice of Medicine, Woman's Medical College of Pennsylvania. 8vo, pp. 1,143. Philadelphia: Lea Brothers & Co. 1894.

To the old students of the late Professor Flint this new edition of his classic work will be most welcome. Its peculiar excellences and its breadth of conception have made it a recognized authority from the time its first edition appeared. The author was a born teacher, an indefatigable observer, a painstaking worker, and a thorough medical philosopher. His clinical pictures of disease are models of graphic description, minuteness of detail, and breadth of treatment. To such as will see the work for the first time there is an agreeable surprise in waiting. This may appear to be high praise, but the work has so well earned its leading place in medical literature that but one view can be expressed concerning its general character as a text-book. The editor has done his part in bringing it up to date, not only in reference to treatment and the adaptation of the newer remedies, but has made numerous additions in the shape of the newly discovered forms of disease, and has elaborated much in the commoner forms which the recent advances have made necessary. Among the new articles are those on Pulsating Pleurisy, Hereditary Chorea, Weil's Disease, Syringomyelia, Acromegaly, Raynaud's Disease, Anthrax, and Glanders. The section on General Pathology has been omitted, as in its old form it was obsolete, and its spirit could hardly be maintained in any reconstructed form as would consistently adapt itself to progress made since it was first written. The classifications have been retained, but some of the articles, such for instance as dyspepsia, indicating a series of functional disturbances, have been treated under the different and now well recognized pathological conditions.

Although the doctrine of self-limitation of diseases so well advocated by Dr. Flint still stands prominently forth in the admirable natural histories he gives, the element of treatment is by no means neglected, in fact by the editor a fresh stimulus is given to this necessary department by a comprehensive study of all the new and leading therapeutic agents.

ASEPTIC SURGICAL TECHNIQUE. With Especial Reference to Gynecological Operations. By HUNTER ROBB, M.D., Associate in Gynecology Johns Hopkins University. 12mo, pp. 264. Philadelphia: J. B. Lippincott Company. 1894.

THE author of this little book goes into the subject of asepsis not only from a bacteriological but from a surgical point of view, and happily combines the functions of each in making what may practically and theoretically constitute the ideal operator. His treatment of the subject is thorough and fully abreast with the latest bacteriological principles of wound treatment, and upsets many of the cherished notions of wound irrigation by bichloride, carbolic solutions, and the like. The careful descriptions of the most approved methods of asepsis by sterilization of instruments, clothing, and dressings, and the insistence of the elaborate ablutions of the hands as practised at Johns Hopkins will impress the reader with a minutia of detail which is fully in keeping with the importance of doing the little things well in order to insure the success of the greater. The work is practical from first to last, and cannot fail to give the reader all the really necessary information required for the practice of asepsis in all the varied gynecological operations. The illustrations are numerous and well executed, particularly the plate which forms the frontispiece, and gives the different pathogenic microbes.

TEXT-BOOK OF ABDOMINAL SURGERY. A Clinical Manual for Practitioners and Students. By SKENE KEITH, F.R.C.S. Ed., Assisted by GEORGE E. KEITH, M.B.C.M. 8vo, pp. 508. Philadelphia: J. B. Lippincott Company. 1894.

ABDOMINAL surgery has grown since 1880 into such a recognized speciality, that any work claiming to be a systematic account of its present status and its future possibilities will be warmly welcomed by progressive operators. Considering the amount of literature upon the subject, the authors have experienced no small amount of difficulty in summarizing results and in reconciling the widely varied views of investigators in this prolific field. But the work, on the whole, has been well done, and stands as a model of its kind for clearness of description, reasonable minuteness of detail, and soundness of surgical principle. Many of the supposed difficulties are simplified in a way that is inviting to the student and assuring to the practitioner. Altogether, it shows the present state of our knowledge of abdominal surgery and creditably covers the entire field, treating systematically of the various diseases of the different organs below the diaphragm.

The first section comprises the surgery of the abdomen from the standpoint of the general operator, while the second section treats of the department of operative gynecology. Under the former are described the diseases of the stomach, intestine, appendix, liver, kidney, and spleen, which may call for surgical treatment; while under the latter are discussed ovariotomy, diseases of the ovaries and Fallopian tubes, uterine fibroids, and diseases of the uterus generally. Each one of the various operations are described in sufficient detail, and all the neces-

sary directions given for after treatment. Aseptic precautions are consistently advocated, and many very valuable practical suggestions are offered for emergencies away from hospitals and in remote rural districts. The technique of the different operations is very satisfactorily explained, as well as the methods of diagnosis and the fundamental principles of after treatment. This is especially manifest in the discussion of intestinal lesions, the choice of operations, and the cardinal symptoms upon which a diagnosis is founded. The bugbear of intestinal approximation is robbed of much of its perplexities and difficulties by the description of the simple and effective methods of the authors. In intestinal anastomosis Senn's plates are uniformly advised, but, strange to say, nowhere is even an allusion made to the Murphy button. Much stress is laid upon electrolysis in the treatment of uterine fibroids, which is good in its way, as offsetting the fashionable, formidable, venturesome, and unsurgical proceeding of hysterectomy in such cases. The book as a whole is a valuable clinical contribution, and is destined to become authoritative on all principles upon which the abdominal surgery of to-day is founded.

History, Constitution and By-laws, and List of Members of the Society of Alumni of Bellevue Hospital. New York: De Vinne Press. 1894.

We learn from this little book that the Society of Alumni of Bellevue Hospital of this city is in a very prosperous condition. Its membership now numbers one hundred and ninety-nine.

The American Institute of Homœopathy. Section of Materia Medica and General Therapeutics.

This is a report of the meeting of the Therapeutic Section of the American Institute of Homœopathy, held in Denver in 1894. The proceedings consisted chiefly in the discussion of the subject of how to treat and how to learn materia medica. The little book contains numerous half-tone portraits of many of the leading homœopathic practitioners in this country and England.

Macrobiotic, or Our Diseases and Our Remedies. For Practical Physicians and People of Culture. By Julius Hensel, Physiological Chemist. Translated by Professor Louis H. Tafel, of Urbana University, O., from the Second Revised German Edition. Philadelphia. Boericke & Tafel.

The author of this book attributes diseases to a diminished electric force, and proposes to prevent and cure most ills by his "physiological salt water." His notions of pathology are interesting. Diphtheria, which he calls "children's catarrh," begins, he says, "with stagnation of the blood in the thymus gland, whence the products of the putrefaction of the albumin of the blood are spread with their infecting force over the whole vascular system." The views set forth in other portions of the book are equally sound and scientific.

Transactions of the South Carolina Medical Association. Forty-fourth Annual Meeting, held in Rock Hill, S. C., April 25 and 26, 1894. Charleston: Walker, Evans & Cogswell Co. 1894.

This volume of the Transactions for 1894 contains the minutes of the meeting and the usual number of papers, reports on special subjects, etc. The next meeting of the Association will take place in Columbia on the fourth Wednesday in April, 1895.

Précis de Clinique Thérapeutique. Par le Dr. A. F. Plicque, Ancien Interne des Hôpitaux de Paris, Lauréat de la Faculté de Médecine, Lauréat des Hôpitaux. Paris: G. Steinheil. 1894.

The author of this little work says that it had its origin in notes made for his own use during the early years of practice. He found, in beginning his life-work, that the conditions of private practice were very different from those of hospital practice, and required often the exercise of certain faculties and of a kind of knowledge not gained in institution life. The work cannot pretend to the dignity of a system of medicine, being, as its name implies, simply a manual of therapeutics. But it is a good manual, systematically arranged, and written in a lucid style; the directions are simple, and the reader is not bewildered by a long catalogue of drugs for every disease. Under each heading the indications for treatment are briefly stated, and then the author mentions a few of the best and tried remedies and gives directions for their employment. The book deals with internal medicine only, and does not touch upon surgical, venereal, or cutaneous disorders.

A Handbook of Medical Microscopy for Students and General Practitioners, Including Chapters on Bacteriology, Neoplasms, and Urinary Examinations. By James E. Reeves, M.D., Member of the Association of American Physicians; Ex-President of the American Public Health Association, etc. Philadelphia: P. Blakiston, Son & Co. 1894.

The author of this excellent little manual states in his preface that his object in writing the book was to take away from the practising physician all excuse for his neglect of the microscope in his daily work. He says, and very justly, that the time has now come when all progressive physicians and surgeons, general practitioners and specialists alike, must either themselves possess sufficient skill in microscopic technique for the faithful and proper discharge of the high obligation which rests upon them in the diagnosis and treatment of diseases, or else be able to command the ready service of some accomplished microscopist and pathologist to do such necessary work for them. The writer himself is a general practitioner belonging to the former class, knowing by actual experience the needs of those situated like himself, and has the rare gift of being able to impart this self-acquired knowledge to others. The work is not elementary for the professional microscopist, but it is admirably adapted to meet the work of the general practitioner, for whom it was written.

Memoirs of the Boston Society of Natural History: Volume IV., Number XI. A Bibliography of Vertebrate Embryology. By Charles Sedgwick Minot. Boston. 1893.

This bibliography appears to be a most exhaustive one, containing 3,083 titles, all of which the author states have been verified in the libraries of Boston and Cambridge, or in that of the Surgeon-General's Office in Washington.

Gynäcologische Anatomie. Die Geschwülste der Eierstöcke. Von Dr. C. H. Stratz. Berlin: H. Kornfeld. 1894.

This beautiful atlas of ovarian tumors consists of fourteen colored plates, with fifty figures, delineating a great variety of tumors of the ovary. The author has had a vast amount of material to select from in Schweder's Clinic, in the Frauenklinik of Berlin, and during his own five years' practice in Java. He appears to have made judicious use of this material, producing an atlas not only of rare tumors, but also of those most commonly met with in everyday practice. There are some forty pages of descriptive text. The plates are well executed and printed, and the work does credit to author and publisher alike.

Human Physiology. By John Thornton, M.A., Author of Elementary Physiography, Advanced Physiography, etc. With 268 Illustrations. New York: Longmans, Green & Co. 1894.

All the essential facts of human physiology have been brought together in this handy manual of some 450 pages, in a form convenient not only for continuous study, but also for occasional reference. The author's style is as easy and smooth as his descriptions are lucid. The illustrations, some of them colored, are numerous and well executed. To the general practitioner, who is not a special student of physiology, we can recommend this little work as one which will satisfactorily meet his needs in this branch of science.

VADE-MECUM du PRATICIEN. Diagnostic et Traitement des Maladies Internes. Par le DR. FERNAND ROUX. Paris: G. Steinheil. 1894.

THIS is a useful manual, giving the main points in the diagnosis and treatment of non surgical diseases. The subjects are arranged alphabetically, convenient for ready reference, and the therapeutic suggestions are for the most part sound, and in accordance with the latest discoveries in this branch.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY. Vol. XIX. For the year 1894. 8vo, pp. 363. Philadelphia: W. J. Dornan. 1894.

THIS valuable volume contains several admirable papers on hysterectomy, others on face presentations, and a masterly address by the President, Prof. Lusk, on the relative value of the various methods of treating uterine fibroids.

SHARP'S TRACTS ON HOMŒOPATHY. 14th Thousand. 8vo, pp. 232. Philadelphia: Boericke & Tafel. 1894.

THIS is a collection of tracts intended for the defence of Homœopathy, the theory of small dosage, the value of the so-called provings, the advantage of single doses, and the general advantages of the system. To such as are interested in the subject this little book will furnish much food for reflection.

A TREATISE ON APPENDICITIS. By GEORGE R. FOWLER, M.D., Examiner in Surgery, Surgeon to St. Mary's and Methodist Episcopal Hospitals, Brooklyn. 8vo, pp. 190. Philadelphia: J. B. Lippincott Co. 1894.

THE present compact treatise comes at an opportune time for the discussion of many questions bearing upon the etiology, pathology, and surgical treatment of an interesting and very frequent surgical disease. The exceptional opportunities for observation which the practice of the author has given him are utilized in a practical and intelligent manner for the benefit of his many readers. Many of the mooted points in the pathology of the affection are discussed with becoming candor and independence, and with a thoroughness eminently commendable. Especially interesting are the views regarding the etiology of the disease as bearing directly and almost solely upon microbic influences. The clinical reports which are inserted in the text are typical of their kind, and serve their full intention of pointing questions of pathology or illustrating lines of treatment. The operative technique is very fully given, and the author's methods are very intelligently described. The illustrations are numerous and good, and the work altogether is a great success.

AN ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES, Including the Pronunciation, Accentuation, Derivation and Definition of the Terms used in Medicine, Anatomy, Surgery, Obstetrics, Gynecology, Therapeutics, Materia Medica, Pathology, Dermatology, Pediatrics, Ophthalmology, Otology, Laryngology, Physiology, Neurology, Histology, Toxicology, Dietetics, Legal Medicine, Psychology, Climatology, etc., etc., and the various Sciences closely related to Medicine, such as Bacteriology, Parasitology, Microscopy, Botany, Zoölogy, Dentistry, Pharmacy, Chemistry, Hygiene, Electricity, Veterinary Medicine, etc. By GEORGE M. GOULD, A.M., M.D., author of "The Student's Medical Dictionary," "Twelve Thousand Medical Words Pronounced and Defined," "The Meaning of the Method of Life," Editor of the *Medical News*, etc. Based upon recent scientific literature. Philadelphia: P. Blakiston, Son & Co. 1894.

THIS in many respects admirable work possesses a great advantage over some of its recent competitors in that it is in but one volume, and therefore much more convenient as a work of constant reference. A commendable feature is the grouping together of many correlated facts in tables, of which there are one hundred and ten in all. The type employed is of excellent size, the printing is unusually good, and the illustrations are judiciously selected and not too numerous. The spelling adopted by the editor is in the direction of the phonetic, the diphthongs being dropped from words of Latin or Greek derivation, as also the final *e* of the name of alkaloids and of certain other words, such as iodide, bromide, iodine and the like, which Dr. Gould, following the suggestion of the American Association for the Advancement of Science, writes iodid, bromid, iodin, etc. In some of the words of this class the alternative spelling is given, and in others, without any apparent reason for the omission, it is not. The weakest part of the book is in the matter of pronunciation. It is very well for a medical lexicographer not to be too dogmatic in cases in which orthoepists themselves are not in accord, but his diffidence should not go to the length of sanctioning such errors as al'bumin, ab'domen, anē'mic diabē'tic, asthē'nia, synē'chia, or such wretched cacophony as making the final syllable of cocaine or leucomaine rhyme with cane or mane. In the case of some words which are frequently mispronounced, as the second one of the term diabetes mellitus for example, the author gives no sign to guide the would be orthoepist; and the pronunciation of the genitive or plural of several Latin words, such as cervix and paries, over which even well educated people so often stumble, is not given at all as far as we have been able to discover. These are sins which some may consider as venial, but we cannot so regard them. They do not absolutely destroy the value of the book as a work of reference, it is true, but they mar its perfection. A dictionary should be an authority in matters of derivation, spelling, punctuation and definition, and errors in any one of these cardinal points are unpardonable. A dictionary maker should be in these matters dogmatic, and being dogmatic should be above all things accurate, otherwise it is but a case of the blind leading the blind. We have nothing but praise for the definitions, which are clear and concise, or for the derivations, but the spelling is peculiar and in many cases unsupported by the best authorities, even by Whitney, whose phonetic tendencies were so pronounced; and as regards pronunciation Dr. Gould is, as we have said, uncertain and in not a few instances unsound. The author is already well known as a maker of dictionaries, and we had hoped that this, his latest work and the fruit of his ripe experience, would prove to be the ideal lexicon for the busy medical man. This, unfortunately, it is not, but it comes very near to it, perhaps as near as anything human can come to perfectibility.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By E. H. BARTLEY, B.S., M.D. Third edition, revised and enlarged. With 84 illustrations. Philadelphia: P. Blakiston, Son & Co 1894.

THIS excellent book contains, in the most concise form, all the knowledge of medical and pharmaceutical chemistry. The present edition has been greatly enlarged, and a new chapter on Physiological and Clinical Chemistry has been added; the same deals with the chemistry of nutrition, digestion, and the urine. This chapter is treated in the most practical way, giving the principles of feeding and diet, the clinical examination of stomach digestion for diagnostic purposes, the easier methods for the examination of milk, and a fairly complete guide to the clinical examination of urine and urinary calculi. In perusing the tests for sugar we miss those of Roberts and Einhorn. The whole book reads admirably well, and deserves the highest recommendation.

DIAGNOSTIK UND THERAPIE DER MAGENKRANKHEITEN. Von DR. T. BOAS. I. Theil, 3te Auflage. Leipzig: Verlag von Thieme. 1894.

THE present edition of this so well-known book on diseases of the stomach has been greatly enlarged and contains the newest ideas and inventions in this field of medicine. Boas has given his personal experiences on many pathological anatomical conditions of the gastric mucosa, illustrating them with figures of the corresponding microscopic specimens. As to the early recognition

of cancer of the stomach he puts most stress on the presence of lactic acid in the stomach contents, this being much more characteristic than the absence of free hydrochloric acid. The book will be read with much profit by every practitioner.

Transactions of the Association of American Physicians. Ninth Session. 1894.

This volume contains an unusual amount of interesting material, and covers a wide range of medical subjects. The papers are short and practical, and for the most part bear upon the leading medical questions of the day.

Text-book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica, Jefferson Medical College, Philadelphia. Fourth edition. 8vo, pp. 740. Philadelphia: Lea Brothers & Co. 1894.

The fact that the fourth edition of this work has appeared within four years attests its value to the general practitioner, and its appreciation by the medical student. Its wide application to the practical needs of everyday medicine commended it from the first to the progressive and working therapeutist. It is not only knowing what to give, but when and where to give, and how the drug will act in given conditions, that makes one a scientific practitioner rather than an ignorant empiric. The book in such respects supplies every need. It is divided into four parts: I. General Therapeutical Considerations. II. Drugs and their Properties. III. Remedial Measures other than Drugs, Foods for the Sick. IV. The Therapeutics of Different Diseases, Tables of Doses, an Index of Drugs and Remedial Measures, and an Index of Diseases and Remedies. The author is well known as a progressive therapeutist, and it goes without saying that all the new or valuable drugs receive their full share of attention, and it is a great deal to say in this, as with other features, that the book is up to date in everything pertaining to the practical therapeutical needs of the practitioner. The additions made are articles on Methylene blue, Chloralose, Pyrogallol, Condurango, Convallaria, Duboisine, Hypodermoclysis, Enteroclysis, Lavage, and several additions to the department of individual diseases. The work has also been revised in such a way as to make it uniform with the United States Pharmacopœia.

Wann Dürfen Gonorrheische Heirathen? Von Dr. Edmund Saalfeld. Berlin: H. Kornfeld. 1894.

This is a little brochure dealing with the subject of the marriage of men who have had gonorrhœa. The author believes that the disease is curable and that when it is once actually cured the man may marry with perfect safety to his wife, himself, and their offspring, if any.

Der Alkohol als Gunss- und Arzneimittel. Von Dr. A. Jaquet, Privatdocent für experim. Pharmakologie. Basel: Benno Schwabe. 1894.

An interesting and well-considered lecture upon alcohol as a beverage and as a therapeutic agent. The author's views are very moderate, and he believes that the consumption of alcohol in the so-called physiological doses by adults is not prejudicial to health or to a long life.

A Manual of Hygiene. By Marv Taylor Bissell, M.D., Professor of Hygiene in the Woman's Medical College of the New York Infirmary for Women and Children. New York: The Baker & Taylor Company.

Dr. Bissell has done a good work in preparing this student's text-book on hygiene. Most works on hygiene are of such size and deal with the subject so elaborately that the student is repelled, being unable, indeed, to give the time necessary for the study of such a formidable looking work. In this book, which is, however, by no means a superficial one, the essentials of the science only are given, and the reader's attention is not distracted by details of value only to the specialist. The book will be found serviceable, moreover, to many practitioners as well as to students.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 4, 1894.

D. B. St. John Roosa, M.D., President, in the Chair.

The Stack Room Completed.—Dr. E. H. Grandin, chairman of the Library Committee, stated that the stack room had been completed during the summer and was now the best in the country, not excepting that at Washington. It had a capacity of two hundred and fifty thousand volumes, just five times as many as were now in the library. He made a strong appeal for books from the overflowing libraries of members, and for donations from their wealthy clientele. The library was greatly in need of an endowment fund of at least one hundred thousand dollars. Money expended in this direction would prove of far greater benefit to the public than if it were used to build more hospitals and dispensaries.

Credit was given by Dr. Grandin to Drs. A. Jacobi and A. M. Jacobus for careful supervision of the work done in the stack room. Dr. Jacobi, who arrived later, attributed all honor for the same service to Drs. Grandin and Jacobus.

The President emphasized Dr. Grandin's remarks regarding the needs of the library, and expressed the belief that if what was wanted were asked for, it would be given. New York was ever ready to give for any worthy purpose when made to appreciate its value and want, but the medical profession had been too modest, and the community had come to regard their services as consisting only in the administration of drugs and the use of the knife. High and above all else was our duty as citizens of this great nation.

Report of Committee to Constitutional Convention.—Dr. W. R. Pryor, one of the members of this committee, made a preliminary report. The committee had been received with courtesy, and, to a large extent, its suggestions had been acted upon. The Convention had agreed to abolish coroners, but refused to put doctors in their place; the Board of Regents had been incorporated into the constitution, as desired by the committee, but their objection to its being made a life tenure office had not been heeded. The committee's recommendation to make county instead of state office of charities and correction in the counties of New York and Kings, and thereby rendering the officers liable to removal by the Governor, had not been accepted, as it affected too many official heads.

Climate in Therapeutics.—The President, in introducing the author, Dr. C. Fayette Taylor, said he was sure the Academy would be glad to know the conclusions arrived at upon this subject by one who had had much experience through travel and the reliability of whose judgment had been demonstrated by enviable success in another department of medicine, that of orthopedics.

Dr. Taylor said that his object in writing the paper was to strongly impress the necessity for the profession, in recommending a change of climate, to have a definite purpose in doing so and more accurate knowledge of the qualities and health influence of the particular climate named. Some gave very indefinite advice, such as to go to California, a State which was seven hundred and seventy miles long, and embraced at least seven different climates. The mean temperature of a locality meant nothing. It might be the same in climates of greatest extremes in their influence on the health. The mean temperature in the different climates of California was nearly the same, while the extremes varied greatly, as did also the physiological effects. Moisture was a very important factor. Yet, although it favored growth of micro-organisms, it did not follow that an air dry enough to be almost free from germs was necessarily healthier. Physicians had found it necessary to send their patients, especially women

and children, living in the dry, high air of the eastern slope of the Rocky Mountains, to the moister valleys occasionally, in order to avoid nervousness and loss of flesh. He could not say whether the peculiar influence of such air was due to increased action of the heart or the constant hammering at the nerves by the wind and sunshine. The author's conclusion on this point was that, while it was important to live in an atmosphere as free from germs as possible, it was even more important to live in one which would give vigor to resist germ influence. It seemed that heretofore the study of climatology had been for the purpose of finding a place where consumptives would not die. There was no such place. There was no place where bacilli would not get in their deadly work. A question of wider interest was, what climate was best and in which we might spend the greater part of our lives? There were many other diseases of which men died besides tuberculosis. Moreover, ill health often depended upon conditions and habits quite independent of climate, and such as could be corrected without change of place. A friend in New York had been almost rejuvenated in three months by limiting his diet during that time to oysters, fish, and clam broth. People went abroad and were sent abroad by physicians in order, as it was stated, to tone up. Yet in many instances the first step toward toning up should consist in toning down. By that the author meant to reduce the unnecessary expenditure of energy which had become a fixed habit of life. Most of us were too prodigal with our resources and squandered more than the occasion required. One wisely answered, when asked how he succeeded in always being so healthy, "Be comfortable." We should learn to sit down and be comfortable where we are.

Among the countries of whose climate the author spoke from personal experience were California, Nevada, other Western and also Southern sections of this country, the West Indies, Spain, etc. He thought a visit to the tropics from time to time would prove healthful in inducing habits of reposefulness. Tropical heat was not oppressive, as was generally supposed by those who had not tried it. Wakefulness in the tropics was a rarity, while the relief obtained from nervous tension and irritability was delightful. The increased activity of the skin freed the system of morbid material and gave rest to the kidneys and lungs. It was a delusion born of the constant assertion of advocates of negro slavery before the Rebellion to suppose that white people could not work in the tropics. The Windward Islands were more favorable for health than the Greater Antilles, being too small to give rise to a land breeze and consequent impurity of air and change of temperature. A visit to tropical points should be accompanied by a change of food. One should live largely on native fruits. Hardly a better climate could be selected than the southern part of Spain, but one had to contend with lack of sanitary arrangements in the cities. The author stated that people from the South could stand northern winters better than those from the North could stand the same season in the warmer climates, and thought the explanation lay in the fact that the former had not previously expended their vital reserve in resisting cold. In visiting mineral springs one should place himself under the care of a local physician, and not ask, as many did, advice of the hotel porter.

Finally, there was an abundance of climate in our own homes if we would but open the windows and let it into our living apartments, taking due precaution against draughts and cold. Too many were taken away for a change of climate in the last stage of disease to localities where they were deprived of comforts which could only be had at home, and were brought back in a long box by a baggage car.

Dr. Simon Baruch opened the discussion. For some years past he had tried to simplify all problems in therapeutics and reduce them to first principles, as it was only in this manner that we could succeed in combating disease. It seemed to him climatology was now in the position occupied by antiseptic surgery some years ago, when it was customary to surcharge the air of the operation-room with carbolized spray, while the surgeon's finger-nails were left unclean. He was in agreement with the paper, the most important point in which, he thought, was the reference to climatic advantages of our own homes, and our failure to utilize them. As an example of what might be done, he mentioned the case of a man with phthisis who was benefited by a visit to Minnesota, which was advised by Dr. Loomis; but his cough, hectic, and loss of flesh returned on leaving those parts, and he consulted Dr. Baruch with regard to another locality. Dr. Baruch told him to remain in New York, and arranged his rooms so that he practically lived in open air and sunshine during the winter months, with the result that in two months he gained twelve pounds in weight, and lost his hectic and cough.

Three Principal Questions in Changing Residence.—Dr. R. C. M. Page thought that in considering a change of residence we were met by three principal questions at the outset: 1, The nature of the climate in its widest sense, including elevation, extremes of temperature rather than the mean, soil, drainage, winds, dust; 2, accessibility, hotel and other accommodations; 3, condition of the patient.

He believed that in the majority of cases it was the change, in a general sense, rather than the particular climate to which benefit was chiefly due. Certainly, however, some places were to be avoided on account of adverse climatic conditions, particularly by patients with phthisis. A long, continuous, tiresome journey and sudden change of altitude were now guarded against in Europe. Persons who were too sick to take exercise should stay at home among friends.

Would Establish a Sanitarium for the Poor.—Dr. Achilles Rose said that inasmuch as reference had been made to Detweiler's establishment for consumptives in Europe, he would point out the need of some similar resort in this country where those could go with moderate means and receive all the advantages of a well regulated sanitarium. The locality should be accessible to the great cities along the Atlantic coast, should be between 1,500 and 5,000 feet above the sea-level, and more south.

Dr. Sell, who had travelled a great deal and for a number of years, cautioned against sending patients to a place whose only recommendation might be its favorable climate. The general advice to go to Egypt was like sending one to California, without mentioning the particular part. He mentioned a number of places where consumptives had had a cessation of their symptoms and lived in health, but they were compelled to stay there and not return to their place of nativity. Among these was a place in Mexico, another in Texas, a third in California. There ought to be a teacher in climatology in every medical school throughout the country.

Working up a Practice.—The following advertisement appeared recently in an English lay journal: "Skin Disease.—A Specialist, who cures every description of Skin Disease, will give a liberal commission to ladies and gentlemen who will introduce patients. Every information given by addressing Specialist."

The Cholera appears, from the cable reports, to be subsiding in Europe. It still prevails to a considerable extent in St. Petersburg, Moscow, and Warsaw, and the surrounding districts, but is rapidly diminishing in Galicia and other infected provinces in the Austrian dominions. Twelve of these districts have been entirely free since the middle of September. A despatch to the State Department from Constantinople announces a renewed outbreak of cholera in that city and the outlying districts. From Hamburg is reported the death of Dr. Oertel, Assistant Superintendent of the Hygienic Institute in that place. His death occurred from cholera contracted in the course of some experiments which he was making with cultures of the comma bacillus.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, September 24, 1894.

H. D. CHAPIN, M.D., IN THE CHAIR.

Nominations.—The following nominations were made, the election to take place at the October meeting: For *President*, Drs. H. D. Chapin, E. H. Grandin, Robert Abbe, V. P. Gibney; *First Vice President*, Drs R. Van Santvoord, H. E. Crampton, A. Caillé, Wendell Phillips; *Second Vice-President*, Dr. S. H. Dessau; *Secretary*, Dr. C. H. Avery; *Assistant Secretary*, Dr. W. H. Ballard; *Treasurer*, Dr. John S. Warren; *Censors*, Drs. Seneca D. Powell, Simon Baruch, C. L. Gibson, George T. Jackson, E. D. Fisher, R. W. Wilcox, A. M. Jacobus, E. N. Liell, Charles H. Knight, William Stevens, C. C. Rice.

Nervous Dyspepsia.—DR. HENRY ILLOWAY read the first paper of the evening. Much literature had appeared under the title "Nervous Dyspepsia," but analysis showed that it was a jumble of many morbid states. The author's purpose was to justify the classification and to define the cases which properly belonged in it. The views of German writers were cited, and disapproval was expressed of including the cases under discussion under the term neurasthenia gastrica. Neurasthenia had come to be a well-established morbid entity, with certain characteristic symptoms, and where a dyspepsia was dependent thereon it could be made to disappear with special attention to the stomach itself. Nervous dyspepsia had been appropriately defined as an ailment of the stomach without any definite and fixed pathological or anatomico-pathological characteristics, depending solely upon the nerves of the stomach. The stomach is primarily affected. If any symptoms on the part of the general nervous system present themselves they are the consequence of irritation proceeding from the stomach, and therefore only secondary manifestations. Treatment must be directed to the stomach; only in that way can the disease be cured.

Symptoms.—The tongue in the morning is covered with a thin transparent coat, the red being visible through it; the patient complains of lack of hunger, but when he begins to eat he can eat as much as anybody, but when he stops his misery begins. He complains of feeling bad at the stomach, of a feeling of heaviness and distention, of eructations of gas, which, however, are attended by some relief and differing from hysterical eructation in not being continuous. The most unpleasant feeling is the one described as general irritability; a desire to have a row with somebody. There might be a feeling of pressure and irritability of the brain. Such feelings lasted an hour and a half usually, sometimes three hours, and were renewed after the next meal. The bowels were usually undisturbed, although an inactive life might lead to constipation. The patients were incapable of prolonged work, and preferred light literature. Sleep was usually undisturbed. Alcoholic beverages were not well tolerated, although frequently prescribed by physicians.

Etiology.—There were two chief causes — mental shock and tobacco smoking. Where mental shock was the cause, as loss of friends or of property, the whole force of the blow seemed to be expended upon the stomach and not upon the general system, as in neurasthenia depending upon a like cause. Where tobacco-smoking was the exciting factor the symptoms would come on after the use of perhaps a single cigar, and were not due to excessive indulgence and poisoning of the system thereby. The patients could digest nitrogeneous foods well, and usually there was a sufficient amount of hydrochloric acid and pepsin in the gastric secretions. In the author's experience there had been no atony of the stomach, yet the symptoms seemed to point to inhibition of muscular action in that organ and disappearance of the same when action was re-established. The vagus supplying the stomach seemed to be in a state of hyper-excitability, and the irritability might be so great as to cause most of the food to be rejected as soon as taken.

In differential diagnosis the author thought it only necessary to exclude neurasthenia gastrica, and this he believed not to be a difficult matter. In this affection the patient felt bad when the stomach was empty, and after eating felt much stronger and better, while the reverse was true in nervous dyspepsia. In nervous dyspepsia the food tasted good, while in neurasthenia gastrica there was no desire to eat. In the latter the intestines were affected, they were not in the former. Neurasthenic patients awoke frequently, complained of sensations of hot and cold, and sometimes as if suffering from malaria, differing in these regards from patients troubled with nervous dyspepsia.

Many had said the prognosis was unfavorable, but the author had found it quite favorable. Even cases of nervous dyspepsia of long standing would recover under proper methods. He had seen no sequelæ although he suspected the condition might in time lead to melancholia and insanity. Nor had there been complications except a slight eczema on the chin. The treatment was not considered in this paper.

A Brief Study of the Physiological Epochs that Predispose to Insanity, with Observations on the Management of Each.—DR. WILLIAM P. SPRATLING, in a paper with this title, spoke of six epochs predisposing to insanity, all of which were physiological except one, namely, heredity. In the order named they were—the epoch of childhood, of puberty, of maternity, heredity, the menopause, and senility.

The peculiarity of the epoch of heredity was its variability, embracing the period when ancestors who were inclined to insanity exhibited signs of the disease. The last epoch, or that of senility, was pathological rather than physiological.

Regarding the first epoch, Gowers had stated that one-eighth of all cases of epilepsy, which not infrequently led to insanity, began during the first three years, and with rickets as a combined cause, seventy-five per cent. were due to infantile convulsions ascribed to teething. Genuine epilepsy, however, probably never arose from dentition, but the convulsions occurring at this time might finally take on all the characteristics of epilepsy. Anything which interfered with the nutrition of the child's brain was a serious matter, for this organ acquired its chief growth the first seven years. Besides dentition as a starting cause, he mentioned blows, fevers, and other conditions which changed the physiological processes of childhood into pathological, and thus laid the basis for insanity.

Pubescence, from the fifteenth to the twenty second year, was more dangerous to the female than to the male. In the former the change from childhood was almost at a bound, while in the latter it was very gradual. The female was liable to show melancholia, mental enfeeblement, bodily inactivity, later along systematized delusion which pertained chiefly to self. The prognosis was good when there was no history of hereditary taint. Nourishment should be given in an easily assimilable form, and the secretory and excretory functions should receive particular attention as they were inclined to be sluggish. Give hypnotics or sedatives only when urgently needed. The best form of iron for the anæmia was the carbonate.

Insanity during maternity occurred more frequently in women about to give birth to an illegitimate child. Infanticide and suicide were common. To produce sleep the author preferred paraldehyde. As showing the influence of heredity, the author knew of a family members of which had shown insanity during four generations on reaching a certain age.

The insanity of the menopause was of the depressed type, frequently with suicidal impulse, yet the prognosis was favorable where there was no hereditary taint. Out-of-door life and change of climate were recommended.

The most common form of insanity of the last period was that of senile dementia. It was rather a retrogres-

sion of the mind. In senile melancholia seventy-five per cent. of the cases showed suicidal tendency. The author had found most satisfactory results from opium, and at this period there was little danger of the opium habit.

In discussing the paper Dr. William Leszynski said he had never felt satisfied that the physiological epoch of childhood had much to do with the development of insanity, although it was a settled fact that hereditary predisposition was a prime element. Puberty in the boy also had little influence since the change was so gradual.

Dr. E. D. Fisher said women at puberty were particularly subject to nervous disorders, as hysteria, mental depression, etc., and required a change of surroundings, for their chances were not good if treated at home. He endorsed the author's recommendation of opium in senile dementia.

Dr. Collins thought some of the divisions made in the paper somewhat artificial, although they might serve to make the subject clear.

The epoch of childhood as predisposing to insanity particularly seemed artificial, and that of old age was very variable, and pertained to degeneration of the arteries. In the insanity of the puerperal period the time had arrived for laying more stress on infection as a cause.

Dr. Van Fleet thought the term heredity a misnomer, that it had been much abused; but the basis of his belief seemed to be fear of its influence on the imagination of those giving a hereditary history.

Dr. Bryson related two instances to show the injurious effects of the same physical conditions enforced upon women as upon men in attaining an education. She thought the same mental training could be acquired and yet allow for differences in physiological processes.

The usual collation was served.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

SANITARY CONGRESS—PRESIDENT'S ADDRESS—HEALTH EXHIBITION—CONFERENCES OF OFFICERS OF HEALTH, SANITARY INSPECTORS, ETC—OVERCROWDING OF HOUSES—DR. KLEIN ON TYPHOID—DEATH OF DR. GREENHILL, THE SCHOLAR OF THE PROFESSION—OPENING OF THE LONDON MEDICAL SCHOOLS.

London, September 29, 1894.

This week we have had another congress, viz., the fourteenth of the Sanitary Institute, which met in Liverpool. On Monday the members were received in the town hall by the Lord Mayor, and the President, Sir Francis Powell, Bart., M P., delivered his address. He passed in review the progress made in the last few years, especially in connection with the Acts of Parliament which dealt with the subject. It was with a note of intense satisfaction, if not of exultation, that he surveyed the progress of the last twenty years, in which more than fifty-six million pounds had been expended under the sanction of the Local Government Board, while local acts had authorized the expenditure of a further sum of more than sixty-seven millions. He then passed to the question of quarantine, and showed how much better we have fared without it in regard to cholera. On vaccination he pointed out that it is the part of true wisdom to be guided by those best qualified to judge, and that those who were in doubt might be reassured as to the harmlessness of the preventive measure by the increased care and precautions which are taken to secure the safety as well as the efficacy of the operation. Among other subjects noticed were the dissemination of phthisis, the alleged increase of insanity, food adulteration, factory legislation, the smoke nuisance, river pollution, and pauper children. A cordial vote of thanks was given to the President. In the evening an exhibition of sanitary appliances, etc., was opened by the Lord Mayor. This exhibition was kept open and musical selections given each afternoon and evening. Here also demonstrations in cooking were given.

On Tuesday the several "conferences" began their work. That of the Medical Officers of Health was presided over by Mr. C. E. Paget, the able officer of Salford, whose address dealt fully with the questions of the Health Acts and diplomas in public health. He spoke freely of the imperfections he had observed in the administration of the acts, but while admitting we might not be able to remove them for a time, urged that their continuance cannot rob us of the stimulus to exertion afforded by the labors of those who have gone before. Moreover, we may live up to those records and make the imperfections we protest against more and more glaringly manifest until those beyond our profession see them and insist on their amendment, so that if we fail to win reform we shall pave the way for others to secure it.

In the evening Dr. G. B. Longstaff, gave a lecture on the overcrowding of houses on land, illustrated by photographs of the Hamburg slums.

On Wednesday Dr. Klein presided over the Section of Sanitary Science and Preventive Medicine. His address was on typhoid fever, as to which he held that sanitarians might continue to regard the disease as specific, and derived from case to case; not, as some had suggested, as originating *de novo* through the bacillus coli communis. This does not render the duty of preventing sewage contamination less urgent, for although the typhoid germ without the bacillus coli communis might not be capable of causing typhoid fever, the presence of that bacillus indicated excremental contamination in which possibly specific typhoid germs might be present.

The conference of sanitary officers was presided over by Mr. Vacher, F R.C.S., and that of domestic hygiene by the Lady Mayoress. In each of the sections interesting papers were read and discussions carried on. Needless to say that hospitality and entertainments were to the fore, and that the members had reason to feel satisfied with a pleasant visit to Liverpool combined with a show of zeal in the cause of sanitary progress.

Dr. Greenhill is no more. He died on the 19th at the ripe age of eighty-one. He was one of the greatest scholars in our profession. William Alexander Greenhill graduated at Oxford in 1841, and was recognized everywhere as an ornament of that ancient seat of learning. Even your younger readers will remember his name as the editor of the best edition of Sir T. Browne's "Religio Medici." Others will call to mind his Latin edition of Sydenham, his translation of Rhazes, or his critical edition with Latin version of Theophilus. These alone should suffice to show that the profession has lost in him a scholar of high order, but those who came into contact with him felt that he was much more—a true gentleman, sincere friend, a devout Christian, a sanitary reformer, destitute of self-interest, and withal crowned with the deepest modesty and generous intentions. He went to Hastings in 1851, and practised there until he retired some years ago, and devoted his remaining time to his literary work, on which he was employed up to the date of his decease from syncope. In Hastings his noble figure was familiar enough, and he was naturally regarded with reverence on the one hand by those who had been his patients, on the other by those who were aware that he was perhaps the greatest scholar which our profession has produced during the century.

London, October 2, 1894.

The custom of opening the session of the medical schools with an "Introductory Lecture" addressed chiefly to freshmen—though giving way further to dinners and *conversazioni*—is still kept up at some of our hospitals, and where the lecturer is fitted for the post has much to commend it. Formerly, October 1st was regarded as an event in the *annus medicus* which every institution and every student ought to observe, and old practitioners, whenever they could, visited their *alma mater* on that

day, and renewed friendships and friendly intercourse. The invasion of the dinner is, in this respect, to be regretted, besides which the lecture afforded the opportunity of words of warning and advice to young men which the teachers have seldom the opportunity of giving.

Yesterday several schools opened with the old "Introductory." At the Westminster Hospital Mr. Hartridge congratulated the students on choosing the profession which called for their highest intellectual powers, brought them into contact with suffering and pain, and called forth those deep feelings of sympathy which united man to man. No other profession could stand on the same basis for usefulness. Look at the immense amount of work which was so freely given by the members of their calling; all the hospitals depended upon it for their existence. Look also at the health of this great city, with its millions of people, and they would have some idea what medical science had done in the department of preventive medicine. If it was the noblest and most useful, it was at the same time the most arduous, the most difficult, and one which received the least notice and reward from the state and the public; the former only recognized those who were able to support its claims. Most of them were not politicians; they were not a powerful body to be conciliated, able to turn the tide of an election or decide the fate of a Cabinet. Much of this was their own fault, because it was a duty they owed both to their profession and their country, to take an interest in politics. He anticipated the time when they should be fairly represented in both Houses of Parliament, and when they would have a Minister of Health in the Cabinet. To the students he would say that much benefit would accrue by raising the standard of the entrance examinations. He should like to see Latin and Greek replaced by modern languages and scientific subjects, which would be equally effectual as a mental training, and far more useful. Working too much was almost as bad as working too little. In regulating their study hours they must be careful to look after their general health. Medicine was a study which should be approached in a scientific spirit, and they could always make their work scientific, in whatever branch they were engaged, by training the mind in the power and habit of accurately observing facts, and should always have the courage to do what they considered right, and allow the consequences to take care of themselves. Referring to the success of "quacks and charlatans" who advertised so largely, he said these advertisements were hardly a credit to journalism; most were of a flagrant character and without a vestige of truth, out of which certain papers made a rich harvest. The so called religious papers were the worst offenders. But of all irregular practitioners the bone-setter was the one whom the public held in the highest esteem. He knew nothing of anatomy, had never been in a dissecting room, but was supposed to be born with special gifts as regards bones and joints. To the bone-setter every injury was a bone out of place. He wound up by saying that advertising quacks, protected by diplomas, were far worse than the unqualified man, and a disgrace to the bodies whose diploma they held, and their existence a disgrace to the legislation of a civilized country.

At St George's Hospital Dr. Isambard Owen took for his subject the importance of mental training in medical study. Accurate observation, he said, was the foundation of all medical work; to it there was no royal road —only the old fashioned way of constant, close, personal observation of case after case, under skilled supervision and systematic reduction to written or graphic records of what was observed. He urged that if school children were systematically trained into more exact habits of arithmetical perception and expression more would be done to render the rising generation scientific than the suppression of Latin in favor of biology could possibly effect. Adverting briefly to the position of the London University and the Gresham Commissioners' scheme, he said that while a tribute of sincere gratitude was due to them for their painstaking labors, the merits of the scheme itself were matter of controversy, and that he had never concealed his own sense of the danger to soundness of medical education with which certain parts of it were charged.

At Middlesex Hospital Dr. Robert Boxall touched upon the steady increase in the number of doctors in recent years, and, by a series of statistical tables and diagrams, showed that the ranks of the profession in England and Wales had been gradually swelling out of proportion to increase in population. Drawing deductions from statistics, he said it was manifest that the outcry which had been raised against the out patient departments of the large general hospitals was unwarranted —at least, in comparison with what might be said of more recently established institutions, most of which had no teaching function to fulfil. It was an undoubted fact that in all the hospitals the number of out patients had increased, but so had also the number of in-patients, and an outcry against the one was no more justified than an outcry against the other. But, inasmuch as medicine was in itself a progressive science, it would be a wonder indeed if the medical charities of Great Britain, which had long been the admiration and wonder of the whole civilized world, failed, as years rolled on, to enlarge their walls and to increase the scope of their utility.

At St. Thomas's Hospital an address was delivered by the Rev. Dr. Merry, Rector of Lincoln College, Oxford, who spoke upon the half-serious, half-jesting strictures passed by Plato on the practice of medicine in his own time, a subject which the great philosopher humorously introduced in the form of a criticism on medicine as practised in the days of Homer. Plato professed to feel the greatest satisfaction in the rough and ready treatment of the heroes who fought under the walls of Troy. The degenerate system of coddling Plato strongly condemned, as tending to the survival of the unfittest, and the production of sickly children, whose presence was not to be endured in his commonwealth. The very existence of hospitals, said the philosopher, was a proof of a degenerate age, when men had impaired their health by intemperance and indolence. No one had a right to be an invalid, and the "coddling" process would never have been introduced if the profession had not been demoralized by wealthy patients, who bribed the doctors to prolong their miserable and useless lives. Passing from this humorous criticism, the lecturer quoted a more serious sentence from his author, recommending that the physician should not be in robust health, and should have known what illness is in his own person. Rightly interpreted, it contained the golden maxim that the physician must not only bring his skill, but his sympathy, to bear upon his patient. The world at large was taking a growing interest in medicine, and men were looking in high hopes to the progress of medical science.

At University College Professor H. R. Spencer said that the treatment of wounds on antiseptic principles had revolutionized surgery and obstetrics, and he believed history would record it as the grandest achievement of the century. In medicine, too, great advance had been made in diagnosis and treatment, as a result of the employment of the experimental method of research, which only the ignorant condemned. As to legislation, which was urgently required for the benefit of the public as well as the profession, he said that autopsies in cases of unnatural or suspicious deaths should be only performed by expert medical jurists and pathologists. Practice by unqualified persons and by medical men whose names had been expelled from the Register should be absolutely forbidden. And the law should be severe on those unprincipled persons who risked the lives of the ignorant poor by circulating among them the cruel slander that patients were experimented upon in hospitals. Adverting to the abuse of hospitals by well-to-do patients, he thought hospitals should be able to recover fees from persons obtaining gratuitous treatment by fraudulently representing

themselves to be poor. In conclusion, he said the profession they had chosen was an arduous one, and yet it was the most fascinating of all. No social class could look down upon those to whom such sacred interests as reputation and life were intrusted. Greater trust hath no man than this, that he trusted his life to his friend.

At St. Mary's Hospital Dr. Scanes Spicer took for his subject, "Medicine as a Profession." Its social advancement, he said, of late years had been remarkable, and had been parallel with the wide general culture and interests of the average modern doctor, who was something more than a mere prescriber of physic. Doctors were more and more finding their way into Parliament, the Privy Council, and the national government. It was a grievance with the profession that it was not directly represented in the House of Lords, where the counsel of medical men would not only add to the efficiency of public work, but signalize the national recognition of the value of medicine to the community. The increase and development of specialism was one of the most striking facts in the medical history of the latter part of the nineteenth century. Specialism was destined to play an even more important part in the development of medical art. He defended it from the charges of shallowness, self sufficiency, and unscrupulousness that had been brought against it. Attention was drawn to the remarkable development attained in less than forty years in the specialty of diseases of the throat and nose, due chiefly to the truly marvellous results of local treatment. On the Continent there was hardly a university without one or more professors of this specialty, and well-appointed clinics; a marked contrast to the indifference and neglect which this branch met with in the United Kingdom. Specialism now enjoyed, more than ever before, the respect of thinking members of the profession and the public; but there was need for still further rapprochement between specialists and the general body of the profession, in the interest of both. Each was necessary for the other, for no one could be an all-round specialist.

At the London School of Medicine for Women, Miss Maida Sturze, M.B., London, alluded to the need of cultivating from the first the scientific habit of mind, seeing that its possession was invaluable to the medical practitioner. The importance of general culture and experience as an aid to the right understanding of others, and as a help in the individualization of treatment was pointed out. The wisdom of devoting time to learning something of the natures and abundant vitality of healthy children was dwelt upon, as the only means of fully understanding their needs when ill, and probably in the future the profession would regard with surprise the fact that in the nineteenth century sick children were so often admitted into hospitals instead of carrying them into the fresh air and sunshine outside cities.

THE ESQUIMAUX AND THEIR TEETH.

To the Editor of the Medical Record.

Sir: It has long been a disputed question as to what effect diet, climate, and mode of life have upon the structural formation of the teeth of mankind. Desiring to make my observations among a people who fitted the conditions of such an investigation as nearly as possible, I chose the Eskimo as my most available subjects, and with that end in view I eagerly seized the opportunity to become one of a number who visited the icy shores of Greenland last summer. Of the interesting people who inhabit this arctic region, the pure Eskimo are fast disappearing through marriage with the Danes; the present generation being known as Greenlanders, or Danish Eskimo. The men are taller and lighter in color than the native Eskimo, shading from bronze to dark tan. Their hair is black, generally straight, long, and unkempt, and, falling over their faces, presents a savage appearance. Their eyes are small, round, and very sharp, with large deep wrinkles extending from the outer edge of the eye to their high cheek-bones. These wrinkles are caused by the habit of constantly squinting to shade their eyes from the intense glare of the ice during the long arctic day. The women are short, rather stout, and comely looking. Their skin is lighter in color than the men's. Their eyes are clear, bright, and similar in shape to the Chinese. Their hair is twisted in a hard knot on the top of the head, held in a place by a ribbon or a rag, the color of which denotes their station in life. Blue for a married woman, red for a single woman, black for a widow with the addition of a narrow strip of white if desiring to marry again. The unfortunate or fallen women of the tribe are designated by a green ribbon bound around the hair. Their food, which consists wholly of fish and flesh, of the various animals which inhabit this region, together with the fat and oil obtained from them, is generally swallowed or bolted without mastication. Their teeth, which articulate squarely upon the cutting edges of the incisors, are worn off in many cases nearly to the gums, giving the appearance of double teeth all around. Caries is not common, although in several cases the first molar teeth were decayed, while all other teeth in the same mouth were sound. In color their teeth have a yellow cast; the structure is more like ivory. The palatal arch is broad and shallow, the mouth large, with firm lips, and jaw square shaped.

From twenty-eight impressions taken in modelling composition, I made as many plaster of Paris casts of the upper and lower jaws and teeth, which were unfortunately lost, together with a valuable collection of Eskimo curios, weapons of the chase, skin, and fur garments, kyaks, etc., when our vessel was wrecked off the Greenland coast, near Sukkertoppen. Despite the unfortunate termination of our expedition, I trust it will be my fortune to again visit the Arctic region, and make a similar collection of casts and notes, to add to the large number now on exhibition at the Medical Museum in Washington.

Roswell O. Stebbins, D.D.S.

55 West Forty-fifth Street, New York.

APEX CATARRH OR TUBERCULOSIS?

To the Editor of the Medical Record.

Sir: In your issue of September 22d I notice a short paper on "Diseases of the Ear and Upper Air passages in Apex Catarrh," by Dr. Howard S. Straight, of Cleveland, O. If I may be permitted the use of a small space in your journal, I want to object to the use of this expression "Apex Catarrh." If Dr. Straight will make careful, and if necessary, repeated examinations of the sputa in these cases of so-called apex catarrh, I think he will find that they are nearly all cases of more or less early tuberculosis. Acute simple catarrhal affections of the chest—"cold," "bronchitis," etc.—do not limit themselves to the apices, and I think that the existence of subacute and chronic affections of the apices of a simple catarrhal character is more than doubtful. In one of the cases cited by Dr. Straight as apex catarrh it was certainly so, for he states that a few days later the patient, a boy aged twenty, died "from a profuse hemorrhage from the lungs."

Post mortem records prove conclusively that tuberculosis is a much more common and at the same time a less to be dreaded disease than is generally supposed, since a large portion of the dead from all causes show healed tuberculous lesions. If this view is correct, and limited apex catarrhs are tuberculous in character, it is certainly a great gain to call them by their proper names and to avoid the use of terms which are misleading and calculated to give rise to a sense of false security very dangerous to the interests of the patient. This view accords very well, too, with what the doctor has to say upon diseases of the ear and upper air passages in such cases, since it is a matter of general experience that the existence of even a slight tuberculous affection in the

lungs renders disorders of the ear, nose, and throat much more refractory to treatment. Physicians in phthisical health resorts have been trying for years to arouse in the profession at large an active appreciation of the importance of recognizing tuberculosis in just these early beginnings. In no other way, I believe, is it possible to save them. Palliation can be had at almost any time, but cures can not.

Yours truly,

H. B. MOORE, M.D.

COLORADO SPRINGS, September 26, 1894.

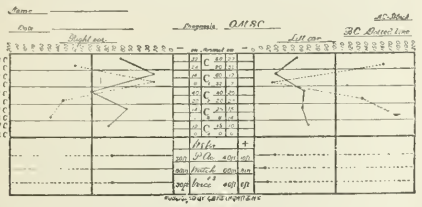
New Instruments.

THE APPLICATION OF THE GRAPHIC METHOD TO HEARING.

BY W. HARVEY SMITH, A.M., M.D., C.M.,

WINNIPEG, MANITOBA.

THE graphic method, when employed to demonstrate physiological or pathological variations from the normal or to express relations and ratios between different bodily functions or conditions, is recognized by the medical profession as an invaluable adjunct to diagnosis. The chart here shown has been devised for the purpose of applying this method to hearing, and thus to provide the otologist with a means of representing the results of tuning-fork and other tests in a form more intelligible than that commonly used.



In this chart the hearing power is expressed in percentages which are based upon the results obtained from the use of Hartmann's tuning forks, the acoumeter, the voice, and the watch. The percentage line on each side of the central columns is numbered from 0 to 200, the 100 line being the line of normal hearing for all tests. The percentages employed are based upon the averages of a large number of tests made upon normal ears, and modified by comparing them with Hartmann's results.

These averages have been printed in the middle column opposite the different tests. Spaces for marking the percentages of aerial and bone conduction are provided, one above the other, opposite the different C's. The aerial conduction is represented by joining together the consecutive aerial percentages with black lines, while red lines are similarly used for the bone conduction. At the bottom of the chart is shown the result of the Weber test and the percentages of hearing for the acoumeter, the voice, and the watch; and in the spaces to the right and left of the middle column the height of time or distance at which (in figures) the standard sounds are heard. A rapid calculation of the percentages can be made from the percentage table which is printed on the back of each chart.

It is obvious to those who possess a practical knowledge of otology, that, owing to the influence of constitutional and other factors, the results obtained from any or all hearing-tests can give but an approximate idea of the condition of the auditory functions. This being true, how essential it is that that system should be adopted for the expression of hearing-power which will afford information in the most intelligible and rational form!

By applying the graphic method to hearing in the manner described, the slightest deviation from the normal can be perceived at a glance, and the comparative differences between the aerial and bone conduction, and the results of the acoumeter, the voice, and the watch tests can be more readily appreciated than by using the numerical system at present in vogue.

These charts can be obtained from Mr. E. B. Meyrowitz, of New York.

A NEW SNARE.

BY WILLIAM A. MARTIN, M.D.,

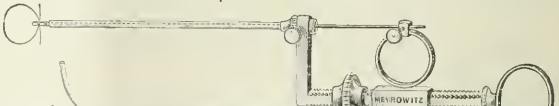
PROFESSOR OF LARYNGOLOGY, SAN FRANCISCO POLYCLINIC.

THE snare described in the following lines is a combination of the meritorious principles found in other snares, rendered possible by the shape of the handle designed by the writer. Most of the snares in present use have one or more objectionable features, the principal one of which to the writer is the time lost in rewiring. This is particularly the case in polyclinic practice, where one either has to have a number of snares prepared for use, or must have an assistant with an extra snare at hand.

The only original principle in the snare is in the shape of the handle. It was designed in this manner in order that the stiff rod into which the wire is threaded could be used, and at the same time prevent the obstruction of the view by the hand of the operator.

The following are a few of the numerous advantages of the snare. One can have any desired number of cannulas with the contained rod wired ready for use. The time occupied in taking out one cannula and replacing it with another is not more than half a minute. The same loop can be shoved out and used again and again, as often as six or seven times.

The economy in wire is not a minor consideration, especially in polyclinic practice. The loop can be turned and held in any desired plane by simply revolving the rod. Anyone who uses the snare for removing tonsils will appreciate this principle. A loop of larger size than permitted in any other snare may be used when the finger-rings come to the end of the slide; the winged screw may be loosened and the rings slid forward on the rod and reclamped, a procedure which in the ordinary snare is awkward and occupies considerable time. The loop may be placed around the part to be removed and drawn taut before attaching to the handle, a desirable feature in post-nasal growths where one has to use both hands. The handle is threaded as in the Bosworth snare, so that the loop may be slowly tightened when desirable. The same handle could be used with the Schrötter laryngeal instruments, it being similar to the Streck handle excepting the double bend. The same handle could also be used for ear instruments, both for cutting instruments



as well as for a snare. Since designing the above snare I see that a similar bend for ear instruments is advocated by Barclay,[1] of St. Louis. In his instruments the angles are not 90°, but by prolonging the shaft of the instrument and the handle they meet at an acute angle.

The snare is made according to my directions by E. B. Meyrowitz, in the most satisfactory manner, and he has also kindly furnished the accompanying cut.

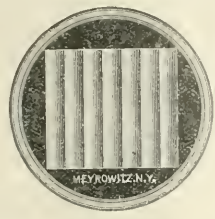
An Italian Hospital has been established in Tunis for the benefit of residents of that nationality.

[1] Archives of Otology, vol. xxii., No. 2.

AN IMPROVED PHOROSCOPE.

By WILLIAM F. AIKEN, M.D.,
SAVANNAH, GA.

In using the ordinary rod-test for heterophoria, the writer has always been inconvenienced by the narrowness of the opening. About a year ago it occurred to him to substitute a series of parallel rods for the single rod, and a crude self manufactured instrument has since then done excellent work. Recently, Mr. E B. Meyrowitz, of New York, has constructed from drawings an extremely pretty instrument, as here illustrated. In practice, the elongated images produced by the several glass cylinders fuse into one long, continuous, and very brilliant bright band. This band is so long, indeed, that when so placed as to be vertical, it extends from floor to ceiling.



Apart from the increased length and brilliancy of the image produced, the instrument possesses the great advantage of a large square opening before the pupil. If, owing to faulty adjustment of the trial frame in which the instrument is placed, the pupil fails to correspond with the exact centre of the opening, it makes no difference, any point within the square affording a perfect view of the image. This large working space saves the annoyance of carefully adjusting a heavy trial frame, the light single frame being more convenient, and more comfortable for the patient. Moreover, the efforts patients make to see through the stenopæic slits and openings of other tests add a dynamic factor to what should be a purely static finding as regards the muscular equilibrium; with the large opening no moving about of the head or eyeballs is excited, the eyes resting quietly in their natural position.

It should be noted that the instrument is a phoroscope, not a phorometer. The amount of deviation shown has to be measured with prisms. Using a rotary variable prism in the other side of the trial frame, however, makes the most efficient form of phorometer, as both eyes look through large openings, and either instrument may be used separately. Mr. E. B. Meyrowitz has suggested, nevertheless, that the two instruments can be combined, making a single phorometer, in case of demand for such an arrangement. I wish to state my indebtedness to Mr. Meyrowitz for his courtesy and readiness in conceiving and executing my idea; likewise for the accompanying cut.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 13, 1894.

	Cases.	Deaths.
Tuberculosis	105	99
Typhoid fever	35	10
Scarlet fever	53	4
Cerebro-spinal meningitis	1	1
Measles	18	3
Diphtheria	119	30
Small-pox	1	0

There are no Public Baths in Rome, according to a statement recently made by Professor Celli.

The Oldest Physician in Great Britain is Dr. Salmon, of Penllyn Court, South Wales. He was born in Wickham Market, Suffolk, in 1790. He is also the oldest Freemason in the country, having joined the order over eighty years ago.

The Pain of Inoperable Cancer has been found by Aikmann to yield in many cases to salicylate of sodium in doses of ten grains three times a day.

The Cholera Bacillus becomes attenuated, it is said, by exposure to direct sunlight, and will then serve as a preventive vaccine.

Illegal Sale of Patent Medicines.—Grocers in England who sell patent medicines are being prosecuted, on the complaint of the apothecaries, under the law prohibiting the sale of poisons without a special license.

Mrs. Sarah Thomas, of Buryport, South Wales, recently celebrated the completion of her one hundred and sixth year. The Princess of Wales sent her a letter of congratulation and a check for one hundred and six shillings, a shilling for each year of her life.

Delinquents in Olympia.—The publisher of our esteemed contemporary Γαλητός has been compelled to print a black list of subscribers to the journal who are in arrears for three years. Of these there are eight, two of whom live in Olympia.

The Face as a Guide in Diagnosis.—The physiognomy of the sick presents innumerable shades of expression. These are certain facial lines and wrinkles which are of positive value in diagnosis, but in the use of these it is important that we discriminate between those natural to the face, and those which are developed by disease. In childhood, however, there are few or none of the acquired lines found in adult life. We may therefore be quite sure of our indications in this class of cases. The more important of these are as follows: The transverse rugæ, the oculo-frontal rugæ, the oculo-zygomatic line, the linea nasalis, the linea labialis, and the linea collateralis nasi. The first two are situated upon the forehead, the first of which, the transverse rugæ, are formed by the action of the occipito-frontalis muscles, and are believed to be indicative of great pain from causes outside the cavities of the body. The next, the oculo-frontal rugæ, are vertical lines extending from the forehead to root of nose; they are formed by the corrugator supercilii muscles; they express distress, anxiety, and extreme pain from some internal cause, cranial, thoracic, or abdominal. They oftentimes indicate an imperfect crisis, and in acute diseases often a fatal termination. I have observed this many times, and whenever I see these peculiar lines I am very solicitous for my case. In excessively severe headaches these two described rugæ may exist simultaneously, and when during the course of an acute disease the two meet abruptly, they denote a developing serious lesion of the brain or some of its coverings, and when I meet a case where this condition exists, I feel justified in advising of the grave nature of the disease and a consequent grave prognosis, a lingering case, if not fatal. The linea oculo-zygomatica extends from the inner angle of the eye down and outward, crossing the face below the malar bone. This is believed to indicate a cerebral or nervous affection in children, in adult life masturbation or venereal excesses, and is frequently a very valuable aid in this class of cases.

The linea nasalis extends in a semi-curved direction from the upper border of the ala nasi downward to the outer margin of the orbicularis oris muscle; this line we find very marked in advanced cases of marasmus, inanition or such diseases as these simulate; in adult life, phthisis and atrophy. Where only the upper half, the linea nasalis proper, is present, it is quite a reliable indication of intestinal disease, typhlitis or entero colitis; it may be present in severe colic, although not marked, as the attack is remittent and of short duration. When the lower half, or linea buccalis, is alone present, it indicates some disease affecting the stomach. It is quite prominent in chronic dyspeptics, and when the two, as last described, together with the linea oculo zygomatica, appear conjointly, they may be regarded as positive evidence of worms, and if the circumscribed red cheeks, the pallor of face around the mouth inside the linea nasalis, to-

gether with the bright, fixed, and wild expression of eye are present, no further evidence of the presence of these pests is necessary. The linea labialis extends from the angle of the mouth downward without marked termination till lost in the lower portion of the face. It is usual in those diseases which affect respiration, and is a more important diagnostic sign in childhood than in adult life; it may be observed in croup, both true and false, in acute laryngitis and capillary bronchitis; in adults most prominently in asthmatic subjects. The linea collateralis nasi extends in a semi-curved direction from the ala to the chin. It is situated further out, outside the lines just described, and is a reliable guide to diseases of the thoracic and abdominal viscera; in fact it may be considered as positive evidence of a lesion in one of these regions, and when with the above is coupled the painful expression about the mouth, together with the peculiar fold on either side the mouth, we may be almost positively certain that the lesion is abdominal. It is very marked in typhus abdominalis, also phthisis abdominalis. The above described are the more important and most frequently met by physicians, and to those who have not studied the physiognomy in this manner I would say, carefully note these lines, wrinkles, and expressions; they will aid you in the diagnosis of many an obscure case, assist you in a prognosis that oftentimes will seem little less than inspirational to your patients or their friends.—Dr. S. M. Spalding.

Nitrate of Cobalt is said, by Dr. Antal, a Hungarian chemist, to be an effective antidote to cyanide of potassium. He has tried it in upward of forty cases of poisoning by this substance, in every instance with success.

In One Thousand Towns in Minnesota the people live and die without the help of a homœopathic physician, so says a contemporary in that State.

Phthisis is one of the most common diseases of sailors, more seamen dying from that than from either accident or heart disease.

Dr. Y. May Kin, now practising in Kobe, Japan, was the first Chinese lady to receive a medical decree in America, and the first scientifically educated female practitioner in Japan.

Combined Carbolic Acid and Chloroform in Typhoid Fever.—The experiments of Werner, at St. Petersburg, in 1890, showed that a one-half per cent. solution of chloroform will kill the bacillus of enteric fever. In 1892 McIntyre, of Glasgow, proved that carbolic acid controls the development of this bacillus, and also exercises an antiseptic action on the intestinal contents. Acting on these hints, Dr. R. H. Quill, of the British Army Medical Staff, stationed at Hirkee, India, has treated with a combination of carbolic acid and chloroform all his cases of typhoid fever for over a year, and reports in the *British Medical Journal* of April 28th that perfect recovery has followed in each case, without the advent of any severe symptoms. In India the mortality of enteric fever is much greater than is usually experienced in temperate climates, which fact increases the value of the test. He used a mixture of thirty six minims of pure carbolic acid, two fluidrachms of spirit of chloroform, three fluidrachms of compound tincture of cardamon, two fluidounces of sirup of hemidesmus, and added chloroform water to make twelve fluidounces. Every two hours the patient was given two tablespoonfuls of this carbolic mixture in a like quantity of iced water. On the first visit three grains of calomel were given to the typhoid patient. On the next day, five doses of the mixture were given, and ten doses on the third and following days until there was a fall of temperature, and the general condition of the patient was distinctly improved, the doses then being gradually reduced to seven, five, and three in the twenty-four hours. To prevent a relapse, the mixture should be continued for at least a week after the temperature is normal, giving from three to five doses each day. Twelve of the patients were in the station hospital, and one took two fluidounces, in all, of pure carbolic acid and the same of chloroform, while another took one and one-half fluidounce of each, the urine occasionally becoming high colored, but never black.

Carbolic acid combined with chloroform reduced the average duration of typhoid fever, with a continuous depression of the febrile temperature. The tendency to diarrhœa was checked, the abdominal distention kept under control, and the stools were almost completely deodorized. There was early cleansing of the tongue, dryness of which was rare and brief. There was no tendency to stupor or delirium, and the patient retained the usual clearness of intellect. The few relapses were of short duration, and secondary complications did not occur. The food was always well digested and assimilated, and convalescence was rapid. In the past, carbolic acid has not been generally adopted as an intestinal antiseptic, probably on account of the small doses given. Full doses, at short intervals, freely diluted and suitably combined, must be given to make carbolic acid efficient in enteric fever.

The Pennsylvania Hospital is to be renovated, its drainage being said to be very defective.

Asparagus causes a reduction in quantity, and increased concentration of the urine, according to Dr. Elliot Daunt.

Dr. Beaven Rake, whose death occurred in Trinidad on August 25th, succumbed, as we surmised in a previous notice, to yellow fever, which has been epidemic in Port-of-Spain during the past summer.

Dr. Henry Hoffmann Donner died in Frankfort-on-the-Main on September 20th, aged eighty-three. Although a skilful physician, he was better known to the world at large as a poet and humorous writer. His best known book was "Struwelpeter," which ran through no less than one hundred and fifty editions in Germany, and was translated into every European language.

The Influenza has been very prevalent in Buenos Ayres during the four months just past, which constitute the winter season in that latitude.

The Cult of the Rotten Calf is the gentle term applied to the prevention of small-pox by an English anti-vaccinationist.

A London Anti-vivisection Journal publishes these pathetic lines:

TO A VIVISECTOR.

Oh, cruel man, how dost thou dare,
With selfish ends in view,
To torture thus a creature fair,
Who never injured you?

Do you not know the God of love,
Whose are the creatures all,
Looks down from His high throne above,
And hears them when they call?

He sees the hand with blood-stained knife,
He hears the piteous cry!
Then spare, oh spare, that poor beast's life,
Oh do not make him die!

The God who made him made you too,
For He did all things make;
Then show much love in all you do,
For your kind Maker's sake.

If the gentle author had a child ill with diphtheria we wonder if he would consent to the use of the diphtheritic antitoxin, a product of the vivisectionist's work on horses. And does this poet eat capon, ride the gelding or hunt the fox?

Taking the Case.—*Patient:* Showing her arm badly bitten.

Doctor: Bitten by a dog, madam?

Patient (with withering dignity): No, sir. By another lady!

BRONZE STATUE OF THE LATE DR. J. MARION SIMS ERECTED IN BRYANT PARK AND PRESENTED TO THE CITY OF NEW YORK, ON SATURDAY, OCTOBER 20TH, BY THE SUBSCRIBERS TO THE FUND.

Medical Record

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Medical Addresses.

DR. J. MARION SIMS—SURGEON AND PHILANTHROPIST.

AN ADDRESS DELIVERED OCTOBER 20, 1894, IN BRYANT PARK, NEW YORK, ON THE UNVEILING OF THE STATUE OF DR. J. MARION SIMS.

BY GEORGE F. SHRADY, M.D., .

NEW YORK.

LADIES AND GENTLEMEN: We have met on this occasion to do honor to a medical man, and through him to show a becoming appreciation of the labors of his fellows.

Strange as it may appear, in consideration of the motive which has actuated this recognition of valuable services to mankind, and the previous opportunities that have been, from time to time, offered for conferring similar honors on the profession, this is the first instance in this country in which an heroic statue has been erected to a member of that fraternity.

Heretofore Fame has restricted her tributes to achievements in every other line of high human endeavor—War, Poetry, Music, Literature, Art, Patriotism, Statesmanship, and Philanthropy have in turn mounted the pedestal, while the Genius of Medicine, with finger upon closed lips, has humbly and mutely awaited the verdict of an appreciative humanity.

This new departure which we this day inaugurate can be hailed, from many points of view, as an omen of good import, as the beginning of an end in which cherished traditions shall no longer hamper the well directed efforts of such as work in other spheres of human usefulness. The public, however, is not so much to blame for lack of a general appreciation of the work of the doctor as would at first appear. It has in reality no means of estimating distinctive merits. It was, therefore, proper, in order to initiate such a movement as the present one, that the profession itself should take the lead, and indicate a fitting subject for such an honor. This was done by the MEDICAL RECORD, which made an appeal to the profession in this and other countries for funds with which to erect a monument to the memory of one of its acknowledged leaders.

A committee was appointed, of which the late Dr. Fordyce Barker was chairman, which comprised leading specialists from every part of the United States. Our own city was represented by Drs. T. Gaillard Thomas, Thomas Addis Emmet, William T. Lusk, William M. Polk, Paul F Mundé, the editor of the MEDICAL RECORD, and Mr. William H. S. Wood, as treasurer of the fund.

The subscriptions were mostly limited to one dollar each, and coming as they did from members of the profession in every part of the civilized world, attested, in an unmistakable manner, the good name and great fame of the American surgeon.

This distinction came, then, from his peers, who were best able to judge his qualifications for it, and who with one accord were delighted to honor him.

It was eminently fitting also that such a tribute should be paid to American surgery in general, through one of its chief representatives. He was a product of the soil as well as the exemplification of one of the principles which has placed American surgery where it is to day, holding the sceptre of the world.

Nothing in all the line of progress during the century has acquitted itself so creditably as this very science of life saving by operative procedure. And America specially points with pride to her great achievements in this noble art, to her notable discoveries in alleviating human suffering, her successful efforts in prolonging human life, and in the accuracy, skill, and daring of her brilliant operators.

America gave ether to the world, invented the new sleep which numbs the touch of sharpest steel, brings sweet peace in the eternal war with agony, and wafts pain to oblivion on the drowsy wing of night. She opened new fields for exploration within the human body, made abdominal surgery with its brilliant successes the possibility of the age, and with dauntless blade and master hand snatched victory from the long-hidden entrenchments of death. In fact in every department of surgical procedure the American surgeon has left his impress for good either in the invention of new methods or in the modification of old ones; and has given American surgery a world-wide recognition for originality of conception, boldness of execution, and success of practice.

In his own department Sims, a born and typical American, was a leading worker. He established a school of his own, which has now won fame throughout the world. Indeed, it is safe to say that Sims's name is associated with more original operations and more new instruments for making such operations successful than that of any other American surgeon. His was the germinal thought implanted in a disposition for untiring work, which changed impossibilities into triumphs, restoring health and happiness to countless numbers of suffering womanhood.

If it be true that no fame is lasting unless founded on labors which promote the happiness of mankind, the name of Sims must live as long as generations succeed each other, and will punctuate the progress of history by its cherished memory.

But Sims, although ambitious, did not seek for fame. When it came to him he viewed it with an innocent surprise. When it was all done, when during his tour of the capitals of Europe, operating in the large hospitals and before the renowned surgeons of the day, his breast studded with the starry decorations of France, Portugal, Spain, and Italy, he could not understand why he was so cordially noticed, forgetting that he himself was the focal point toward which all the then great lights centred.

Indeed, it was said of Sims that he could practise and earn his living in any city of Europe, by virtue of what became for him a cosmopolitan reputation.

He was, however, virtually alone in his conviction of ultimate success. His few professional friends, who were at first enthusiastically hopeful, became, in the face of his early failures, mistrustful and discouraged. While they admired his ardor they pitied his delusion. In his darkest hours came confidential advice from his brother-in-law: "When you began these experiments," said he, "we all thought that you were going to succeed at once, and that you were on the eve of a great discovery. We have watched you and sympathize with you, but your friends here have seen that you are breaking down with overwork. And besides, I must tell you frankly that with your young family it is unjust to them that you continue in this way. You have no idea what it costs you to support your hospital, now for over three years,

and my advice is to give it all up." His answer came quickly and to the point: "My dear brother, if I live I am bound to succeed. I am as sure that I will carry this thing through as I am that I now live. I have done too much already. I am going on with these experiments to the end, it matters not what it costs, if it costs my life."

The destiny of discovery forced him against many apparently overwhelming obstacles to finally fulfil his mission. Thus a backwoods doctor of Alabama, struggling for his daily bread, hampered by sickness, working for the work's sake, his ardor glowing in the very ashes of his hope, with desperate cases forced upon him, compelled to follow in a given line, and conscious of a duty he owed to his poorest patient, was ever busy in his long and lonely drives in devising the newer means of relief. Turning to account a trivial circumstance in the treatment of a patient, what was before a perplexing problem became a solved discovery. A new method of operating was thus suggested, and with an almost overpowering enthusiasm in the possession of the principle he eagerly put it to the test. His first operation was upon a female slave. It failed, as did others upon similar subjects. But there was enough of encouragement in each to prick his ambition and spur his purpose. He must have suitable means to the end, so he equipped a little hospital of his own, and with the humblest of poor patients accomplished the greatest of triumphs.

The stitches used in his operation were necessarily so deeply placed that they could not be securely tied, and were themselves a source of infection. And then another step was taken. He had been lying awake for an hour wondering how to tie the suture, when all at once an idea occurred to him to run a perforated shot along the string, and when the suture was tightened to compress the shot, thus making the knot secure. He became so elated with the discovery that he lay there until morning performing in imagination all sorts of operations upon the patients in his little hospital. But the shot did not answer every purpose, for the silk of the suture still made union impossible. Just at this time he was walking from the house to his office when he picked up a piece of fine brass wire. "A wire is the thing," said he. A neighboring jeweller made him a fine wire of silver, and with it the thirtieth operation was performed upon the long suffering yet hopeful slave and the principle was forever established.

These incidents are merely sketched to present an outline of some parts of his character; how the greatest ending may have the most insignificant beginning. Whenever a great discovery is to be made the idea of it compasses the individual round and about, it possesses him by day and by night, at all hours and in all places, until the misty conjectures form the rainbow of promise, which frames the prospect of a world beyond. Thus Sims found fame waiting with her chaplet. From little things to great ones is the lesson of every invention. With Sims all the successes of his great operations hinged not only upon the wide utility of the famous instrument now inseparably associated with his name, but upon the accidental suggestion of a cast-off suspender wire.

So also the little hospital maintained by himself from the limited income of a poor, sickly, and hard worked practitioner, with its beds occupied by bondwomen, was the germinal conception of the present Woman's Hospital in this city, the only institution of its kind in the world, and an eternal monument to the ardent zeal and lofty purposes of its brilliant founder. Thus while here the statue preserves the memory of the good man, of the faithful worker, of the great inventor, of the broad philanthropist, the Woman's Hospital becomes for him and all of us an ever living principle, extending its charity, widening its influences, perfecting scientific skill, and fulfilling its divine mission of alleviating suffering and saving the lives of waiting generations of stricken womanhood.

But Sims was not only a leader in his own department but was always ready to devise new methods of treatment in the broader domain of general surgery. As a striking instance of this he was the first to boldly advocate the operative invasion of the abdominal cavity for gunshot wounds of that region. When the lamented Garfield was shot, Dr. Sims, in a cabled interview from Paris, advised that such an exploration should be made. Astonishing as it was, and as much criticism as it then provoked, it would be the first of all expedients at the present day.

But I must not dilate on points that will be more fully touched upon by the distinguished speaker who is to follow me.

Suffice it to say that every man having his place, Sims has found his. If brains, opportunity, environment, and energy fit him for great things, he is singled out as a memory of good accomplished, as an emulation for kindred spirits, as an exponent of the progressive idea, and as an acknowledged benefactor of his race. The realization of such a position for Dr. Sims is manifest in the reverential duties of this hour, which consign his lovable memory to the heritage of a grateful humanity.

DR. J. MARION SIMS—THE FATHER OF MODERN GYNECOLOGY.

Being an Address Delivered October 20, 1894, in Bryant Park, New York, on the Unveiling of the Statue of Dr. J. Marion Sims.

By PAUL F. MUNDÉ, M.D.,

NEW YORK.

Mr. Chairman, Ladies, and Gentlemen: You have heard from my distinguished friend, the preceding speaker, who and what manner of man Dr. Sims w s. To me has been delegated the honor of enlightening you as to the reasons why he was selected for the peculiar distinction of having a statue erected to his memory. I say "peculiar distinction" because, while in our parks and squares are found the statues of soldiers, statesmen, poets, merchant princes, and clergymen, nowhere until to day, so far as I am aware, does there stand a statue of a physician. There have been several public monuments and busts erected to prominent physicians in other cities, notably a monument to Dr. Ephraim McDowell, the discoverer of ovariotomy, in Lexington, Ky.; a bust to Dr. Benjamin Rush, in Philadelphia, and a monument to the "Discovery of Anæsthesia," the heroes of which are not mentioned in the public garden of Boston. But this statue to Dr. Sims is the first of its kind erected in this country. And why has this great distinction been awarded him? Simply and solely because, among the many eminent physicians and surgeons whom America has produced, he stands pre-eminent as the man through whose genius, perseverance, and energy a special branch of medical science and practice was so renovated, improved, and elevated as to create an era in medicine and raise America from the place of the docile and receptive pupil to the proud position of the teacher of older nations.

This claim is allowed Dr. Sims without dispute, even by those European nations who are most jealous of their own achievements in medical science.

Up to fifty years ago the special branch of medicine to which Dr. Sims devoted himself, as soon as sufficient opportunity offered, had made comparatively little progress. About the middle of the present century three men in Europe, by their individual efforts, each in his own land, raised this branch of medicine to the dignity of a specialty, and placed it on a sound scientific basis. These men were Simpson, in Great Britain, Récamier, in France, and Scanzoni, in Germany. But in spite of their efforts the treatment of these diseases advanced but little, and the one needful factor, the knife, was rarely used. Then, like a meteor, appeared the genius of Sims! In the Southern town where he had for many years followed the practice of a successful general surgeon, as my predecessor has already stated, accident caused him to stumble

on a method of operating and curing a hitherto practically incurable injury. Strange to say, the instrument which enabled him to achieve this success, and which remains indelibly associated with his name, owed its origin to the happy thought of a bent kitchen spoon! An ordinary man would not have grasped the situation; but the genius of Sims at once comprehended the immense value of his discovery, and led him on to improvement after improvement, until the whole procedure was perfected.

The field of Montgomery, Ala., then became too narrow for his ambition, and in 1853 he came to New York. His one great object here was to establish a hospital for the exclusive treatment of the diseases peculiar to the female sex; and long and hard did he work, until, after much opposition from physicians and laymen, and many a disappointment, in 1855 he was at last able to form the Woman's Hospital Association. On the opening, in 1856, of a temporary hospital in Madison Avenue, among other speakers to commemorate the occasion, Dr. Valentine Mott, who was the foremost surgeon of his time both at home and abroad, made the following remarks: "Go on, Dr. Sims, in your work of charity and benevolence! Although no marble urn or inanimate bust may tell of your honor and renown, you will yet have in all coming time a more enduring monument; and that monument will be the gratitude of woman." The latter part of Dr. Mott's prophecy has long since been fulfilled. And to-day we are assembled to celebrate the unveiling of the statue which Dr. Mott scarcely expected to see erected.

The limited accommodations of the hospital soon proved insufficient, and after many delays funds were secured for the erection of the first pavilion of the present Woman's Hospital, at Forty-ninth Street and Park Avenue, the land for which was given by the city. Since then one other pavilion and a number of cottages for tumor operations have been donated by private citizens.

This Woman's Hospital, founded by Dr. Sims, was the first institution of its kind in the world. Its work became world-known under his teachings, and those of his colleagues, Emmet, Thomas, and Peaslee. And from its walls have issued scores of young physicians, and thousands of professional visitors, who carried what they had there seen and acquired to the four corners of the globe.

A sojourn of several years in Europe made Dr. Sims's name familiar to the medical profession abroad, and many opportunities were there afforded him of demonstrating his peculiar methods of operating. But his name became particularly well known after the appearance, in 1866, of the only book of any magnitude which he ever wrote, the originality and boldness of which aroused admiration and surprise all over the professional world. By the older physicians it was even regarded with more or less distrust and incredulity. This was particularly the case in Germany, then so very conservative in this branch of medicine, but now the boldest of the bold in her daring achievements with the knife. I well remember how, in 1867, Scanzoni, the Nestor of German gynecology, whose assistant I then was, brought a copy of the translation of Dr. Sims's book, which had just appeared, to the clinic, and emphatically expressed to me his opinion that, original and ingenious as Sims's views and methods were, he still was only an enthusiast, whose illusions were not capable of realization. And that was less than thirty years ago! And in these thirty years these very "illusions" of Sims, subject, of course, here and there, to the modifications of increased experience, have become the accepted rules of practice all over the world. It may truly be said that this book of Sims made a revolution in modern gynecological practice. The era of what must properly be called "modern" gynecology, that is, operative gynecology, dates, so far, at least, as the world outside of the New York Woman's Hospital is concerned, from the year 1866. Many of Sims's views have remained uncontested or unchanged, others have been modified, and others, again, disproved. But the fact must always be admitted that the impulse of active surgical interference given by him to the, before him, largely conservative treatment of the diseases of women, has resulted in the enormous advances which this specialty has made during the last twenty-five years.

With Sims came the revolution which upset the conservative "do little" methods, and opened wide the field of active, radical, scientific, and rational treatment by surgical means of the diseases and malformations which formerly were merely palliated or left unrelieved. As the exponent of a new system in gynecological therapeutics Sims may truly, to use the term of the clergyman who delivered his funeral oration, be looked upon as an "apostle." Without disparagement to the patient labors of previous workers in the same field, I must insist that the greatest triumphs in this specialty have been achieved since Sims first taught us how to use his speculum, the scissors, the knife, and the needle for the cure of the diseases to which he paid particular attention. J. Marion Sims may, therefore, with all propriety, be called THE FATHER OF MODERN GYNECOLOGY, and it is to this universally admitted claim that he owes the distinction of being the first physician to whose memory a statue has been erected.

The genius of Dr. Sims was not limited to the specialty with which for all time his name will be connected. Quite early in his career he wrote an article on "Convulsions in Infants" (Trismus nascentium), in which he advanced the very plausible theory, borne out by later experiences, that these convulsions could be prevented and relieved by removing the pressure exerted on the brain through the soft skull of the child by the simple plan of placing it on its side, instead of permitting it to lie constantly on the back. Again, he was among the first, if not the first, to recognize an abscess of the liver and open it by a free incision. Obstruction of the gall-bladder was also the subject of an article by him, in which he described the operation of opening that organ, and thus relieving the symptoms. One of Dr. Sims's last original achievements has already been referred to by the preceding speaker — I mean his criticism of the treatment of the wound of President Garfield. I well remember how vehemently his views were opposed by the leading surgeons of this city, who insisted that it was presumptuous for him, a surgeon in an entirely different line of practice, to offer such radical suggestions to them. But Sims's views soon gained ground, and to day, only twelve years later, the correctness of his prophetic assertion is so well recognized that any surgeon who would fail to carry out Dr. Sims's advice to at once open the abdominal cavity in case of injury by gunshot or other perforating wound, and suture the wounded organs, would be considered criminally negligent! If only one such case out of one hundred is saved by this practice, it is so much gained, since without the operation death is inevitable.

I hope I have been successful in demonstrating why a statue has been erected to the memory of Dr. Sims. It certainly is not my object to deliver a fulsome eulogy of this great man. He needs no flattery. The record of his deeds speaks for itself. His memory, and the recollection of what he has done for suffering mankind will be far more enduring than his statue or the granite on which it stands. Let his life be a shining example for us to follow!

Insolated Cholera Cultures.—Dr. Palermo, of Rome, has succeeded in producing an attenuated cholera virus by the action of sunlight. This agent does not destroy the bacilli, but modifies their biological character. Guinea-pigs inoculated with cultures which had been exposed to the sunshine for more than three and a half or four hours not only presented no symptoms of the disease but were also found to be immune, resisting inoculation with the most virulent cultures.

Original Articles.

SOME UNUSUAL CASES OF ABDOMINAL SURGERY, WITH COMMENTS.[1]

By CLINTON CUSHING, M.D.,

PROFESSOR OF GYNECOLOGY, COOPER MEDICAL COLLEGE, SAN FRANCISCO.

In January, 1893, I was asked to see the wife of a medical man, who had been suffering for several years with occasional attacks of fever accompanied by a disturbed condition of the digestion and by marked emaciation. The attack lasted from six to ten weeks, the temperature varying from 100° to 105° F. Following the attack she would slowly return to her normal state of health. There was no marked pain to indicate local disease, inability to take and digest food being the most pronounced feature.

Professors L. C. Lane and J. O. Hirschfelder saw the case in consultation, but aside from a diagnosis of chronic indigestion, no decision was arrived at.

Upon examination the patient was found in no pain, much emaciated, and without distention of the abdomen. Abdominal and pelvic organs apparently normal, analysis of urine negative; heart and lungs in good condition, pulse weak. After the examination I told the husband that I was unable to form a definite opinion as to the nature of the case, but that the probability lay between a commencing tubercular peritonitis and a small collection of pus somewhere in the peritoneal cavity.

I advised an exploratory incision as the best means of settling the question. On February 4, 1893 (with the assistance of Professor Steele), the abdomen was opened in the usual way below the umbilicus in the linea alba, the hand and arm introduced, and all the abdominal organs carefully examined.

Everything was found normal except an enlarged gall-bladder, filled with gall-stones, on the right side beneath the liver. I advised the removal of the bladder with the stones.

The opening in the central line was closed, and the abdomen laid open just below the ribs on the right side, the gall-bladder drawn out and ligated close to the liver, and the whole removed.

The recovery was uneventful, the fever disappeared, and since that time there has been no recurrence of the trouble.

A question of importance now comes up. What relation, if any, was there between the gall-stones and the fever and emaciation?

If the gall-stones were the cause of the fever, it would appear to me probable that they produced a reflex irritation of the stomach and thereby an indigestion of a sufficiently severe character to account for the fever. I am the more inclined to take this view on account of a similar experience six years ago in a case where I stitched the gall-bladder to the skin and drained it after removing a quantity of calculi.

In this last case all the symptoms were at once removed by the operation. In both cases the gall bladder could not be felt by palpation, and it was not suspected that there was any fault with this organ.

In any event, the prompt relief of the symptoms, and the subsequent good health, leads me to the conclusion that the disorder of the gall-bladder was the cause of the sickness. Since the existence of the gall-bladder is not essential to the health of the individual or to the function of the liver, I believe its removal, when diseased, is better surgery than to drain it, or to secure an artificial opening between it and the pylorus.

In April, 1893, I saw, in consultation with several well known surgeons, a case of stricture of the rectum in a woman, aged twenty-eight, the mother of two children. The stricture was about a finger length above the anus, and the contraction of the gut would not permit the introduction of the first joint of the finger.

[1] Read before the Medico-Chirurgical Society of San Francisco, Cal., September 3, 1894.

The consensus of opinion was that the disease was probably malignant, and the majority of those present opposed any surgical procedures owing to the inaccessibility of the disease.

Professor Lane and myself advised an operation on the ground of the youth of the patient and the possibility of a cure, and that the real facts in the matter could only be determined by an effort to remove the disease.

On April 22, 1893, with the assistance of Drs. Stillman and Rixford, I performed Kraske's operation, which consisted of the removal of the coccyx and the lower segment of the sacrum, the breaking up of the attachments of the sigmoid flexure of the colon to the pelvic wall, the drawing the detached gut down, the removal of six inches of the gut, including all the diseased portion, leaving about two inches of the rectum next the anus *in situ*, as it was apparently healthy. The upper end of the gut was then drawn down and carefully sutured to the end next the anus, and the large wound in the back closed with silk worm gut sutures. On account of the escape of some of the contents of the bowel between the stitches, suppuration took place in a portion of the wound. A small recto vaginal fistula formed at the upper end of the vagina immediately behind the cervix; with the exception of the fistula the wound healed readily, and she was enabled to return to her home at the end of two months much increased in weight and in good general health. She returned to San Francisco in November last, when I closed the recto-vaginal fistula, which healed readily. There was left at the site of the sutures a decided narrowing of the rectum, but the stricture permitted the passage of a Wales's soft rubber bougie an inch in diameter. At this time her physician writes me that after the lapse of fourteen months her general and local condition remain excellent.

A microscopical examination of the removed specimen demonstrated that it was an epithelioma.

One who has never witnessed this operation cannot easily conceive how thoroughly the parts are exposed to view as the operation proceeds, no vessels ligated, hæmostatic forceps being sufficient. A large sponge with a cord attached was passed up into the pelvis and protected the intestines from injury.

It is yet too soon to say that a permanent cure has been made, but the outlook is good and we have at least given the patient a year of comparative health, with good prospects of a continuance.

In this case the disease was situated almost exactly in the centre of the pelvis, and could be reached through an abdominal opening only with the greatest difficulty, and from below only by sacrificing the lower end of the gut with its sphincters unless, as in this case, the opening was made as Kraske advises. Had I to deal with a similar case in the future, I would make a trial of the Murphy button for uniting the ends of the gut, as much time would be thereby saved and the shock lessened.

Mrs. G. H——, the wife of a medical man and the mother of three children, applied to me for advice regarding an enlargement of the abdomen. She was in good general health except that she was unable to stand long upon her feet without a feeling of weight, and a bearing down sensation in the lower part of the abdomen. She was about thirty six years of age. An examination demonstrated a bad laceration of the cervix and perineum. There was marked hyperplasia of the uterus, and a smooth elastic tumor in the region of the right ovary which was pronounced an ovarian cystic tumor, and an operation advised.

On February 25, 1893, the patient was placed under ether, the uterus thoroughly curetted, the laceration of the cervix and perineum repaired, and afterward the abdomen opened in the usual manner. What was supposed to be an ovarian cyst proved to be a colloid cyst growing from the retroperitoneal tissue just below the right kidney, and the inner wall of which was made up in large part of the outer wall of the ascending colon. The tumor was about the size of a child's head at term.

The wall of the sac was covered by peritoneum about the thickness of card-board. The sac was tapped, but the colloid mass had to be removed by the hand; manifestly the sac could not be removed without sacrificing, or, at least, greatly endangering, the wall of the colon, so the cut edges of the sac were stitched to the abdominal wall and a drainage-tube inserted and fastened into the abdominal wound.

There was no shock and the recovery was uneventful. At the end of a year there was still a slight discharge from the fistulous opening, and the narrow tract was syringed out with a solution of nitrate of silver, sixty grains to the ounce, and the fistula then closed. The ovaries were found to be normal. The plastic operation on the cervix and perineum had yielded a perfect result.

I report this case, for retroperitoneal tumors of this kind are uncommon, if we are to judge by the fact that we seldom see one reported in the medical journals.

The error of diagnosis is easily understood when it is remembered that the cyst was movable and was in direct contact with the ovary, and that the patient's abdomen was well loaded with fat. However, mistakes in diagnosis in abdominal diseases are so frequent that they have ceased to cause surprise.

Dr. Hennessy, of Napa, sent a woman to me February last, with a history of pelvic inflammation ending in a discharge of pus from the rectum and from the bladder. She also passed gas from the bladder, from time to time.

She was much emaciated and suffered a good deal from pain in the region of the left ovary. Upon examination an immovable and tender mass was found in the region of the left ovary, and the diagnosis was made of a pus-tube opening both into the rectum and bladder.

On March 3, 1894, assisted by Dr. Hennessy, the abdomen was opened and the diagnosis verified. The whole left broad ligament was distended and filled with cheesy pus, and the remnants of a pus-tube were in evidence. The tube was ligated with catgut and removed, and the pus cavity in the broad ligament thoroughly curetted and afterward mopped out with a mixture of equal parts of carbolic acid and compound tincture of iodine, and a rubber drainage-tube passed through from the abdominal wound into the vagina.

There is still a fistulous opening in the abdominal wall, but the patient has grown fat and hearty, and bids fair to make a perfect recovery. This case is somewhat out of the ordinary.

In this connection I would like to call the attention of the members of the Society to a practical matter of undoubted value, and which I put in practice for the first time in this case.

In order to avoid fistulous tracts caused by leaving in the abdomen silk ligatures that have become infected with pus, I prefer in pus cases to use catgut, but a serious objection to catgut is, that in handling it with wet hands, and when it is soiled with blood and pus, it becomes slippery, and when a knot is tied down in the bottom of the pelvis, I do not feel sure that it will hold.

It occurred to me that, after the catgut had been kept in sulphuric ether for ten days in order to get all the animal oil out of it and render it antiseptic, if it were put into a mixture of an ounce of common rosin to a pint of alcohol, it would preserve the catgut and make it sticky so that it would stay tied, whether wet or not.

The experiment was a success, and the catgut stayed tied, and I can recommend it as an improvement.

Two years and a half ago a patient, aged about thirty-five, brought me a letter from Dr. Henry O. Marcy, of Boston, asking me to give her such attention as might be needed. She was exceedingly nervous, and was suffering from pain in the region of the ovaries. She was a widow and had never been pregnant. Upon examination the ovaries were found more than usually sensitive, and slightly enlarged. I advised measures to improve the general health and the use of the continuous current of electricity to be passed through the ovarian region by means of large pads made of potter's clay. She did not return for treatment and I heard nothing more of her for two years. Last spring she came to my office again for advice, stating that after leaving me over two years ago, a surgeon had performed laparotomy and removed the left ovary and tube, but with no benefit to the troublesome symptoms.

Upon examination she was found to have a ventral hernia the size of a small cocoanut in the line of the abdominal incision. The right ovary was about the size of a duck's egg, and extremely tender, the right Fallopian tube was enlarged to the size of one's thumb. Behind the uterus there was what appeared to be a mass of hard fecal matter in the rectum which prevented my making a satisfactory examination, and I instructed her to go home and take a large rectal enema and to return for further examination.

Upon her return the mass was still felt in the same place and a digital examination per rectum demonstrated the fact that the mass was in the lower part of Douglas's pouch, and through the thin wall of the gut, I could make out the outline of a round flattened mass something like the end of a spool, but further consideration led me to the conclusion that it was a finger-ring, and I so informed the patient.

She then told me that she had learned since the operation that a valuable ring had been lost at the time and that it had never been found. This only confirmed me in my original opinion that the mass in Douglas's pouch was a finger-ring buried in lymph.

On May 24, 1894, assisted by Professor C. N. Ellinwood and Dr. E. W. Thomas, the abdomen was opened and the right ovary, which was a mass of cysts, and the enlarged Fallopian tube, were removed; an attempt was made to dissect out the mass in Douglas's pouch, but on account of the cartilaginous hardness and the imminent danger of making an opening into the rectum, the effort was for the moment abandoned. The fibrous sheath of the rectus muscle was next dissected free along the edge of the incision in the abdomen and, after the usual sutures of silk-worm gut were introduced through all the tissues composing the wall, interrupted buried sutures of heavy silk were used to bring together the fibrous layers that had been dissected out, and finally all the structures were brought together by the deep sutures of silk worm gut, the buried sutures being introduced to prevent, if possible, the recurrence of the hernia. The patient was then turned upon her side and Douglas's pouch laid open from below, when the gold ring with an emerald setting, as bright and clean as the day it was made, came into view, and with a pair of strong forceps and long-handled scissors was quickly removed from a firm bed of lymph where it had laid for two years. As a consequence of the dissection a rather free hemorrhage followed, and a sponge in the grasp of a long-handled forceps was left in the opening for six hours, which effectually controlled the bleeding. The recovery was slow but uneventful, and she left the hospital at the end of four weeks. I am confident she will now be restored to health.

It is of interest to know that so small a body could be detected after being in the peritoneal cavity for over two years, but this can be understood when it is remembered how thin the rectal wall is.

Had she been free of the ovarian and tubal disease, and not suffering from hernia, I doubt that the simple presence of the encapsulated ring would have warranted a serious operation for its removal. Nevertheless Douglas's pouch is one of the most sensitive points in the human body, as can be proved by passing a sponge down upon it during an abdominal operation. Other manipulations are borne without a sign of suffering, but if Douglas's pouch is touched, the patient begins to struggle.

The following case is reported by Dr. Rixford, and is a valuable contribution to the literature of abdominal surgery, for it illustrates some of the difficulties attending diagnosis, and shows what may be done in the way of exploratory incision in serious conditions, without causing untoward symptoms:

R. L. Jump, a physician, has enjoyed generally good health. On April 18th he felt perfectly well, though for ten days or so previously he had been troubled with constipation, a very unusual condition for him. During the night of April 19th, he had abdominal pain sufficient to keep him from sleeping, situated in the right iliac and umbilical regions. The pain was constant, and resembled that experienced in several similar attacks which occurred during the last three years, though it was not so severe. In one of these attacks the pain persisted a week or more. During the evening of April 20th he was slightly feverish, and more so the following evening. Sunday morning he felt well, and walked to the ferry, but by night he was feeling badly and chilly, and had a temperature of 102.5° F. by the mouth. He took ten grains of calomel and confined himself to milk diet, but did not go to bed.

The temperature came down to 99.8° F. on the 23d, to 99.5° F. on the 24th, but rose again on the 25th to 100.5° F. He took a second dose of calomel, after which the temperature fell to 99° F. On the 26th, 27th, and 28th he took long buggy rides and felt well. Friday, the 27th, the temperature was normal night and morning, and continued so for three days. During this week, from the 23d to the 30th he had no pain.

On Saturday, the 28th, he returned to the city feeling well. Sunday he felt as well as ever, and ate with relish meat and vegetables. That night he slept well. On Monday afternoon, April 30th, he began to feel badly again; he had some uneasiness in the abdomen, but ate as usual. Temperature 102° F. Next morning he took an ounce of Rochelle salts, vomiting part of it. That night he took five grains of calomel in divided doses. Temperature 103° F. He passed a sleepless night, and Wednesday morning, May 2d, went across the bay. The abdominal pain had returned worse than before. Temperature, 104° F. At times he complained bitterly of the pain, and asked for an exploratory incision.

On Thursday, May 3d, the temperature reached 105° F., followed by a remission to 103° F. Friday morning. Five grains of phenacetine brought the temperature down to 101.5° F. The pain was so severe that morphia was given. On this day there were several fluid stools, which were thought to be due to the beef extracts with which he had been fed for two days.

The rectus muscle on the right side was quite rigid, and a decided tumefaction was felt just below and to the right of the umbilicus. This point was very tender on pressure. There was moderate tympanites. One year and a half ago he had had an extensive pelvic abscess, which was incised deeply through the perineum. In view of these facts, together with the patient's request, and the history of several attacks of abdominal pain mentioned above, and the rapidly increasing severity of the symptoms, the attendants decided upon an exploratory incision, it being thought that there was present an abscess, probably of appendical origin.

On Saturday afternoon, the 5th, Dr. Cushing, assisted by Drs. Stillman, Rixford, and Huffaker, made an abdominal section through the body of the rectus muscle immediately over the tumor. The appendix appeared in the wound and was quite normal. The lower eight inches of the ileum were moderately congested, and in violent peristalsis. The mesenteric glands of this region were greatly swollen, some being as large as almonds, and of a purple color. The total mass of the glands was sufficient to be felt through the abdominal wall, and accounted for the tumor. One of the glands was shelled out for examination.

The case was evidently one of typhoid fever, in spite of the clinical history. Typhoid fever had been discussed several times before the operation, and was strongly suggested by the rapidly increasing fever and the fluid stools of May 4th, but it was excluded on considering the history of previous abdominal trouble, the period of defervescence and return to normal health, the severe pain, the excessive tenderness, the muscular spasm, the chills, and the absence of the typhoid eruption and stupor, for the mind was bright as ever.

There was considerable dark-colored fluid in the peritoneal cavity. A glass drain was inserted. The wound was closed with silk-worm gut sutures, and dressed with carbolic acid and glycerine. There was no shock following the operation, and no vomiting.

Soon after the operation delirium became profound, and continued to May 18th. It was peculiar in that the patient knew those about him, and offered rational suggestions concerning his treatment.

On the next day after the operation the patient's pupils began to dilate, and the dilatation soon became extreme. Then strabismus occurred, lasting several days. The head was retracted, and a certain degree of opisthotonos was present. With these symptoms the pulse-rate increased to 120 and 140. Subsultus tendinum was excessive. Beginning as usual in the hands, it extended seemingly to every muscle in the body; the arms and legs were thrown about, and the thoracic and abdominal muscles contracted spasmodically.

The drainage tube was withdrawn after forty-eight hours, and the stitches were removed on the fifth day, the wound having healed by complete primary union. On the sixth day, while the attendant's back was turned, he tore off the adhesive strips and opened the lower third of the wound. No evil resulted other than the somewhat delayed healing by granulation of this portion of the wound.

Tympanites was excessive at times. The typhoid eruption appeared after the operation, and was marked on the abdomen and chest, and a few petechiæ were present even on the extremities.

At no time was the diarrhœa excessive, nor was there blood in the stools. Prostration was extreme, and the discharges were involuntary for a week or more. The greatest care was necessary to prevent the formation of bedsores, and, notwithstanding the patient was turned from one position to another every twenty minutes, and air cushions and cotton rolls were used, several small bedsores did form.

The temperature, taken by the rectum, ranged from 102° to 105° F. from May 2d to 14th, when decided remissions took place, and defervescence set in. On May 21st the temperature was 99° F., and thereafter remained normal. Great distress was caused by drying of the secretions of the throat. Several times complete casts of the pharynx had to be forcibly dislodged.

The case is remarkable in a number of respects. Few cases of typhoid are accurately observed at as early a date as this. There occurred an interval of complete defervescence following vigorous purgation with calomel and restriction to a milk diet, and complete return to health for three days. After this, the fever rose rapidly but continuously for four days. Several explanations of this have been suggested; one, that the disease really began about April 19th, and that by the prompt administration of calomel it was aborted, to be lighted up afresh on too early return to ordinary diet. Another is, that the symptoms were due to an error in diet during the prodromal stage, and were relieved by the removal of fermenting intestinal contents by the calomel.

The exploratory incision yielded a number of valuable observations besides those mentioned; viz., the localized congestion, the violent peristalsis, the dark fluid in the cavity, the enlargement of the mesenteric glands early in the disease. Dr. S. M. Mouser, to whom was submitted the excised mesenteric gland, reported that Esmarch tubes inoculated from it showed only the typhoid bacillus in pure culture. This fact is almost proof positive against ulceration of the intestines having occurred, for a break in the continuity of the mucous membrane gives entrance to a great variety of bacteria with which the intestinal contents swarm. From the violence of the peristalsis in the lower end of the ileum as the coil lay exposed, the explanation of the colicky pain was evident.

The remarkably severe nervous symptoms deserve some

attention; meningitis and frightful subsultus and violent delirium, which made it at times most difficult to give the patient food; all this in a case which progressed to convalescence without the slightest evidence of intestinal ulceration, and which was followed by a rapid return to perfect health, once convalescence was established.

Dr. Jump is Assistant Demonstrator of Anatomy in Cooper Medical College, and a most enthusiastic and thorough student of his subject. Believing that he was suffering from appendicular trouble, and knowing the dangers attendant upon it, he insisted that an exploratory incision be made without delay. He said, "If I should die without operation, and it be found that the disease could have been removed by surgical means, I want put on my tombstone, 'A victim of conservative surgery.'"

THE RATIONALE OF HYDROTHERAPY.[1]

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RECENTLY a professional friend suggested that, by devoting too much attention to hydrotherapy, my usefulness as a member of the profession would be impaired owing to a one-sided view of therapeutics. This suggestion has "given me pause," but upon reflection I regard it as originating in a mistaken view of the duty of the physician to his colleagues, and to humanity at large. I take it that the physician's first duty is to cure disease, his second duty, but not less important, to garner up his dearly bought experience and offer its deductions to his fellow-laborers for criticism, study, and, if worthy, for imitation.

Through all my professional life I have been more deeply interested in therapeutics than in any other branch. Hence my contributions, whether medical, surgical, or gynecological, have been to the treatment of disease. My having spent the larger part of my professional life, like many of yourselves, in village and country practice, may account for this predilection for a branch of the profession which is to-day too much neglected at home and abroad.

A young Viennese doctor recently told me that he knew nothing of therapeutics, because his teachers were engrossed in the diagnosis of living patients, and in autopsies of the dead ones, far more than in saving the former from the fate of the latter.

To search out a rationale for therapeutics has ever been my aim, because only by this means may therapeutic methods be firmly established in the minds of the profession. This is the reason that has led me to the investigation of water as a remedial measure. Here was a field that opened a valuable mine for exploration. How inexhaustible and rich this mine is, I have daily reason to observe. If I am persistent in offering to the profession the results of my explorations in this direction, the explanation rests in the fact that I have discovered the same surprising inattention to, and consequent unfamiliarity with, hydrotherapy in the large majority of the profession, which was a painful discovery in my own case. As the value of this much neglected remedy dawned upon me in a somewhat extensive experience gathered in private and hospital practice, the question presented itself: Is it not a duty to agitate this subject in the medical societies, until its merits and objections are thoroughly canvassed?

From the earliest medical times water has been applied in medicine. In his work "De Aqua et Locis," Hippocrates laid down principles in hydrotherapy which are so sound and practical, that it would be a blessing to suffering humanity were medical students indoctrinated in them to day.

[1] Read before the North Carolina State Medical Association, April 17, 1894.

The average medical man goes into practice with the idea that warmth stimulates, and cold depresses. And yet Hippocrates himself taught the reverse, which is the truth. One of the first lessons we are taught in surgery is that when a limb is frost-bitten we should avoid heat, and apply cold. The reason is obvious even to the tyro in medicine; but when this tyro becomes a full-fledged doctor, and hears the cold bath suggested in typhoid fever, he at once objects to it as a depressing agent. To overcome this prejudice, which is as deeply rooted as it is irrational, has been exceedingly difficult, even for some of the greatest intellects, and most influential physicians, whose lives and works have illumined medical history. Asclepiades, of Prusa, the bosom friend of Cicero, was a warm advocate of water. Indeed he insisted upon being called a water doctor, and he was the man who founded the school in which were equipped for practice such illustrious men as Antonius Musa, the physician who saved the lives of the Emperor Augustus and of the poet Horace; Cornelius Celsus, the bosom friend of Ovid, and also Galen. All these men remained true to and exemplified the teachings of their preceptor, applying water successfully in many acute and chronic diseases; and yet water fell from the high estate to which they had brought it. Paulus Ægeneta, the greatest physician of the seventh and eighth centuries, was the discoverer of the use of the cold douche in sunstroke. Cheyne, Huxham, and Currie, men well known in English medicine, and Hufeland, the renowned German medical philosopher, were enthusiastic advocates of hydrotherapy, as was in later times that grand teacher Niemeyer. These representative men are mentioned to demonstrate that hydrotherapy never was, and is not now, a medical fad, that it must surely be founded on correct rationale and on practical results at the bedside, if it enlisted the advocacy of such men.

When I am charged with undue enthusiasm in this matter, I am proud to be able to point to these men, and men like Ziemssen, Semmola, Charcot, Draper, and Peabody, as confrères and collaborators.

One of the reasons why water has not become fully established as a remedy despite the advocacy of able and conscientious men, is that its rationale has not until recently been studied with care and precision. To Professor Winternitz, of the Vienna University, we owe the first attempt to invest it with some scientific accuracy. As a follower and student of this clinician, I have endeavored to impress upon my American colleagues the importance of not accepting water as a remedy only upon empirical grounds.

If it is to take a permanent place in therapeutics, a place from which the whims and fancies, the prejudices and fashions of coming generations shall not again displace it, the *rationale* of its action must be clearly established.

In this essay it is impossible to furnish anything more than a brief outline. The more succinctly principles are formulated, however, the more readily they may be accepted or controverted. The *rationale* of the internal application of water will be omitted, because this is very simple and generally appreciated. That diuresis, for instance, is enhanced by free drinking of water, is a trite observation, as is the cleansing effect of stomach lavage, and intestinal irrigation.

Although the external application of water in disease has been carefully studied by capable physiologists and clinicians, it has not obtained such universal recognition among practitioners as its positive effects deserve.

The action of water upon the human organism is derived from its physical and mechanical effects.

The physical qualities of water are utilized in hydrotherapy because it is an excellent vehicle for conveying the thermic and mechanical effects aimed at.

Water absorbs and gives up heat readily; it may be used in solid, liquid, or gaseous form; it may be applied to any limited part of the body or to its entire surface.

Hence its physical property alone makes it a most flexible therapeutic agent.

Thermic agents, as is well known, affect living tissues in the most pronounced manner.

Smooth muscular fibre contracts under cold, and expands under heat, and its contractility may be entirely destroyed by an excess of either.

By the conveyance of cold or heat by means of water, we are therefore enabled to produce striking effects upon the vital processes which depend upon muscular activity. As cold and heat are irritants, their reflex effects conveyed through the nervous system also become valuable therapeutically. Applying these axiomatic principles, we find that circulation, respiration, tissue change, and heat-production may be positively influenced by the application of water as a medium of conveyance of cold and heat, that abnormal conditions of these functions may be remedied and their healthy equilibrium restored.

That the application of cold to the cutaneous surface produces pallor and cutis anserina, is a well-known fact, as is also the *rationale* thereof. The circular fibres of the cutaneous vessels, and the elastic tissue surrounding the cutaneous capillaries are contracted, and thus they are made to contain less blood. Stagnation occurs in the arterial capillaries, while the venous, being less easily contracted, remain filled; the part becomes cyanotic. If this stage be prolonged under extreme cold, necrosis of the tissues lying in immediate contact ensues. On the contrary, if the application of cold be of brief duration reaction takes place, the part is aglow.

In the first instance we have a paralysis of the inhibitory nerves, which allows the vaso-constrictors to exert full sway; while in the latter the inhibitory nerves are stimulated, and tonic contraction and relaxation ensue. The deeper vessels in the muscular tissue are more slowly affected. The local hyperæmia produced by this reaction both on the cutaneous surface and in the deeper parts, is therefore not a passive congestion, as has been too often assumed. It is not a congestion like that produced by the application of warmth, but is the result of a vital process, reaction which is the physiological sequel of the preceding depression. Admitting these trite physiological facts, you perceive that an immense field for therapeutic effect is at once opened.

The blood which is driven out of the cutaneous and muscular vessels must be taken into the general circulation, and thus produce hyperæmia in other more or less distant parts; arousing increased activity in organs whose circulation has been impaired by disease; removing the result of abnormal tissue change which the sluggish organ has been incapable of unburthening; stimulating it to more normal function.

That such effects are really produced, laboratory experiment as well as observation at the bedside has again and again demonstrated.

In a valuable essay before the recent International Medical Congress at Rome, Professor Winternitz, of Vienna, offered some practical observations upon the changes produced by thermic agencies upon the circulation of the blood and upon its composition in health. He ascertained positively that all applications of cold which involved the entire surface of the body, or a considerable part thereof, resulted in an increase of the number of leucocytes; the percentage of hæmoglobin and the specific gravity of the blood were also increased. This remarkable change in the blood was more or less enduring, its extent varied according to the technique employed, and sometimes it did not entirely disappear even after a tolerably prolonged period of observation.

Only in those cases in which no reaction ensued, as manifested by cutaneous hyperæmia, did this effect upon the blood fail.

Indeed, in such cases the erythrocytes, and often the leucocytes, also were diminished. Sometimes the red corpuscles were diminished while the leucocytes were increased.

Locally the application of cold, when followed by reaction, almost invariably increased the cellular elements, specific gravity, and hæmoglobin of the blood, while a diminution of all these ensued in distant parts. After flowing foot-baths, for instance, blood taken from the toe showed an increase, while that taken from the finger or ear lobe showed a decrease. Warmth mostly produced a diminution of the cellular elements, hæmoglobin, and specific gravity of the blood. A comparison of the composition of the latter in the normal condition of health, even showed that blood distribution is quite unequal; for instance, while blood taken from the point of a finger furnished 4,955,000 red corpuscles, and ninety-one per cent. hæmoglobin, blood drawn from the abdominal skin showed 7,366,000, and a hundred and fifteen per cent. hæmoglobin. When, after this examination, a cold compress well covered was applied so as to envelop the whole abdomen, the blood drawn from the abdominal skin and tip of toe an hour later, was found to present a still greater difference from that of the finger-tip drawn at the same time; and while the cell-elements were decidedly diminished in the latter, that drawn from the former, underneath the compress, showed an enormous increase of erythrocytes and hæmoglobin, sometimes amounting to 2,000,000 of corpuscles, and over thirty per cent. hæmoglobin.

Up to the present time all our observations upon the effect of cold compresses and poultices were conjectural and empirical. But these valuable observations demonstrated them upon a clear rationale.

That these effects may be utilized to explain the rationale of cold applications in disease, was demonstrated last year by Thayer, of Johns Hopkins University, who observed that the blood drawn from the lobe of the ear of a typhoid fever patient after a Brand bath, contained three times the number of leucocytes which resulted from a counting previous to the bath. Since this enormous increase could not be the result of new production during the fifteen minute bath, the conclusion is inevitable, in view of Winternitz's observation just cited, that the increased activity of the circulation induced by the changing anæmia and hyperæmia of the cutaneous surface resulting from the cold bath and friction, has driven these cells from their hiding-places on the outskirts of the blood-stream and elsewhere, and brought them into active service.

Thus we have a brilliant explanation of one of the most important effects of the cold bath in typhoid, of the mildness it impresses upon its course, which may be charged to the phogocytic action of the leucocytes when actively mingled with the blood-current, where they must come into living contact with Eberth's bacilli and other pathogenic organisms. How different this physiological method of stirring up a sluggish circulation is to that produced by medicinal agents, every practitioner may learn by comparing the impotence of the latter with the demonstrable results of the former. Another result of the application of cold to the periphery is the increased blood-pressure produced. The contraction of the arterial capillaries induces a more rapid flow of blood into the veins, while the deepened inspiration, which is also a well known incident of the application of cold to the surface, accelerates the circulation in the smaller vessels, causes the blood to flow more rapidly into the left auricle, the contraction of the ventricle becomes more vigorous. Thus blood-pressure is enhanced.

Cold improves the muscular tone of the vessel, increases tension, but warmth relaxes them, causing passive dilatation and loss of tone. Although both produce a hyperæmia, one is the result of reaction and is tonic, while the other is the result of relaxation and is atonic. This trite fact is sadly disregarded in practice. Its more general recognition will do much to neutralize and remove the fear of shock from cold applications in atonic conditions. Before entering into the rationale of the clinical application of these effects, the reflex action of cold and heat as irritants may be briefly referred to here. That the idea of the direct derivative action of irritants like blisters is fallacious, has been clearly shown by Naumann and others. Naumann severed all the

connections of a frog's head from its body, except the spinal cord, and then severed one leg from the body after tying the vessels (to prevent bleeding) except by its sciatic nerve. By applying irritants to the severed leg the blood in the lungs and mesentery was made to flow more rapidly; when the irritant was withdrawn it flowed more slowly. From this experiment he deduced laws which are of so much importance in the *rationale* of hydrotherapy, that I may be pardoned for summarizing them here: "The action of irritants is reflex and potent on the circulation; feeble irritants stimulate the latter, and intense irritants depress it; effects continue after withdrawal; relaxation ensues after the stimulation; cooling follows the warming effect of the increased circulation."

That the circulation of the blood in distant parts is reflexly influenced by thermic irritants, has been plainly demonstrated by the classical experiments of Max Schueller upon trephined rabbits.

Having the circulation in the pia mater directly under his eye, he found that any irritation, such as pressure upon the belly, was followed by filling of the veins.

The application of cold wet compresses upon the belly of the rabbit was followed invariably by dilatation of the blood-vessels in the pia, and increased and slowed pulsation and deepening and retardation of the breathing.

The application of warm wet compresses to the belly of the rabbit was at once followed by a contraction of the vessels of the pia, a diminution of cerebral pulsations, and a more rapid and shallow breathing.

Very hot compresses were followed by the same effect as cold compresses. And right here I may call attention to a point not sufficiently appreciated, that extremes of heat produce temporarily the same effect as extreme cold.

By dipping the rabbit into cold or warm water, *i.e.*, giving it a bath, the same effects were produced as by compresses of the same temperature.

Many other valuable points of practical interest were ascertained by these experiments, whose results are sustained by others, all tending to demonstrate that the various hydriatric procedures produce positive effects which medicinal agents are incapable of accomplishing.

It is not difficult to demonstrate that the thermic action of water upon the human organism is capable of influencing its every part and function in the most pronounced manner.

Beginning with the skin, we know that this is an organ of protection by reason of its external layer; of excretion and heat regulation by reason of its glandular and vascular supply; of sensation by reason of its harboring terminal nerve-fibres. Hence the skin is the great outpost of the human body. As a stimulant to all these functions water has long earned a well-deserved position. That by warmth or cold conveyed through it we may increase or diminish any or all of these functions of the skin, need not be enlarged upon before this audience. By reason of its action upon the glands of the skin we may enhance excretion of products of tissue-changes, as in uræmia by warm baths and hot packs; by reason of this action we may increase or diminish the heat of the body, which is regulated chiefly by giving off moisture, and which may be powerfully influenced by direct cooling of the blood as well as by reflex effects from the nerve-centres. That soothing or stimulating manifestations may be produced by warm or cold baths is also so common an observation that it requires only an enumeration in this category.

Next to these powerful effects upon the skin proper, let us consider the effect of hydriatric procedures upon the heart and circulation. The first impression of cold upon the sensory cutaneous nerves is rapidly conveyed to the brain. Rapid contraction of the cutaneous vessels ensues, causing an increased vascular tension, which is followed by slowing of the pulse. This continues so long as the individual rests, but the pulse-rate increases with continuance of high tension if exercise be taken after the hydriatric procedure. The effect of cold applications upon the respiration is to deepen and slow it; the normal frequency is, however, soon resumed; but the deepening effect continues. Hence it is wise to send anæmic and other patients requiring increased supply of oxygen, at once into the open air after cold hydriatric applications.

The influence of cold applications upon constructive and destructive metabolism is demonstrated by the increase of urinary specific gravity and of urea which ensues, and which continues several hours, as shown by Juergensen and others, also by the increased excretion of carbon dioxide, discovered by Liebermeister and Voit after cold baths. Warmth produces the opposite effect.

Having now briefly pointed out the powerful physical and thermic effects of water upon the human body, it remains to refer to the mechanical effect.

Friction alone has been shown by Pospischl to produce a great increase of heat loss. And Winternitz has demonstrated that when active mechanical irritation is combined with cold baths, the temperature of the patient is more readily reduced.

Indeed Winternitz has announced it as a law that the amount of compensatory heat increase which is incidental to all cold baths is not influenced by the absolute amount of heat abstraction, but by the degree of actual cooling of the peripheral terminal nerve-fibres which govern the production of heat by reflex action.

Mechanical irritation, as friction during a cold bath, prevents tremor and that intense tonic contraction of the muscles which always results in the production of heat. These facts are beautifully utilized in the Brand bath, whose efficiency depends not any more upon its temperature, 65° F., than upon the active but gentle surface friction.

Aside from the reflex effect produced by the mechanical aid utilized in hydriatric procedures, the actual pressure with which water may be applied enables us to vary its effects.

In a full tub bath respiration is more difficult, because of the pressure of the water upon the thorax.

The effect of a douche delivered under pressure of one or two atmospheres is stimulating to the cutaneous results at the points of impingement.

The exact experiments of Maggoira, and Vinaj[1] demonstrated that the mechanical effect of water applied under pressure of two atmospheres increase threefold the working capacity of the muscles, as mathematically ascertained by means of the ergograph of Mosso, which correctly and automatically registers muscular resistance.

The mechanical massage produced by a good douche sets diseased structures into a vibration which cannot be approached by simple manual massage. This mechanical effect is constantly utilized most effectively in feeble patients, to whose condition it may be graded and adapted.

Locomotor-ataxia patients may be greatly injured by cold baths and douches, hence in these cases we utilize advantageously the tonic effect of hot douches by combining more or less the mechanical effects of pressure, gradually increased and adapted to the case.

This brief outline of the *rationale* of the action of water upon the human organism may be fitly concluded by explaining the manner in which it may be applied therapeutically.

We have several—indeed numerous—methods of applying water externally, all of which aim to deduce some curative or palliative result from the application of those principles of hydrotherapy which have been briefly formulated under the term *rationale*.

But we are capable of applying water in the treatment of disease with greater accuracy and more extensive latitude in resultant effect than is possible from the application of medicinal agents. I do not say this in depreca-

[1] Blaetter: fuer Klin. Hydrotherapie, January, 1892.

tion of the latter, whose value no one is more ready to acknowledge than myself.

To substantiate this proposition, allow me briefly to point out that we have three elements of increasing and diminishing the therapeutic effect of water upon the organism, viz., temperature, duration, and pressure.

That the temperature is capable of modifying the effect of water is well known. A very high or a very low temperature produces destruction of tissue, while moderately hot water produces a rubefacient effect.

The difference in the effect of a bath or other hydriatric procedure at 100° F., and one at 45° F., need but to be mentioned to be appreciated, and it cannot be denied that every five degrees more or less between these two extremes must produce a different effect in the same individual.

That the duration of a bath or other procedure is capable of modifying the effect of the latter is also known.

It would be easily appreciated by the experiment of dipping one hand into water at 40° F. for two seconds, and drying it with friction ; and then putting the other hand into the same water for ten minutes, and drying with friction. In the first case we would obtain the stimulating effect with a fine glow and well filled, ruddy, cutaneous vessels ; while in the second instance we would have a shrivelled skin, of a cyanotic hue, cold and clammy, which many minutes, if not hours, of friction would be required to react from.

It may not be so evident that every second of time of exposure to a hydriatric procedure of the same temperature may alter its effect. But this is really a fact, of which anyone can be convinced by personal observation.

Pressure.—Although the modifying influence of temperature and duration is usually recognized, the effect of pressure is not so generally appreciated.

A pressure of four atmospheres driving a stream of water of any temperature through a very minute opening produces destruction of the skin upon which it impinges.

During one of the meetings of the staff of the Montefiore Home a good deal of amusement was created by drilling small apertures into the thumbs of some very skeptical colleagues, by means of the douche filiforme of Lauriat.

Driving water at the same pressure through a larger aperture will produce a rubefacient effect, while a stream of still less pressure will produce a temporary blush only.

Thus we may produce the destructive effect of a caustic, or blister, or the rubefacient effect of mustard by simply varying the pressure with water of the same temperature.

When a stream of water at 50° F. is driven upon the body under a pressure of two atmospheres, the depressing (chilling) effect of the low temperature is counteracted by the massage and friction due to the forcible impact.

The skin emerges from such an application in a glow. If the same individual be bathed by the pouring of the water over her body from a sponge, the effect would be depressing (chilling), and so much greater reactive capacity would be required on the part of the individual that an attendant would be necessary to aid it by friction.

It is plain, therefore, that we have a safe latitude of seventy degrees (40° to 110° F.) in temperature ; a safe latitude from one second to many minutes in duration ; a safe latitude up to thirty pounds in pressure, by means of which we may modify the effects of hydriatric procedures.

Besides these mathematically ascertainable elements of a hydriatric prescription we have various modifications in hydriatric technique, as baths, packs, ablutions, douches, etc., by means of which we may again render the effect very flexible.

One who has had occasion to observe this flexibility of hydriatric measures cannot fail to be convinced that no similar effect is deducible from medicinal agents.

It is difficult if not impossible (selecting a powerful remedy for illustration) to ascertain by any reliable test if there be a difference in the effect of strychnia upon the pulse, respiration, digestion, or tissue-change produced by any non-toxic dose (from say $\frac{1}{60}$ grain to $\frac{1}{20}$). I am not aware of such facts having been ascertained.

All the so-called physiological effects described by Horatio Wood and others are predicated upon poisonous doses, not upon medicinal doses.

The same observation may be made upon many other valuable agents. Unless toxic doses, or doses closely approaching these be used, there is no definite clinical or rational difference ascertainable.

Hydriatric procedures, on the contrary, are so flexible, they may be administered by such a variety of methods, that their effect may be definitely dosed, as it were, and correctly ascertained.

In conclusion, I would offer some illustrations of the *rationale* of a hydriatric procedure.

Place a patient suffering from any severe infectious disease, with high temperature, into a bath of 70° F. for fifteen minutes, practise active friction, and observe the result.

Elevated temperature, rapid and perhaps feeble pulse, shallow respiration, dulled intellect, lost appetite, concentrated and scant urinary and other secretions indidicate that the nervous system is overwhelmed by the products of infection. So soon as he enters the water he gasps. The shock and subsequent stimulus to the cutaneous surfaces are conveyed to the nerve-centres and thence reflected to the heart, lungs, and the other organs.

Observation at the bedside at once renders these effects patent. The first effect is a refreshment, an enlivenment of the cerebrum. The eyes are opened ; the face loses its apathetic stare ; consciousness returns after one or more baths ; the inspiration is deepened ; expectoration is facilitated ; the widening of the peripheral vessels and the stimulation of their coats relieve the heart ; blood pressure is increased, and the laboring organ becomes as quiet as does a sea-tossed ship in the hands of a skilled mariner. The secreting glands are aroused to activity. Moreover, the temperature is reduced, not so violently as by medicinal agents, but more definitely, more in accord with normal tendencies. In brief, all the manifestations of the disease are favorably influenced because the normal standard is slowly but steadily and lastingly approximated under the influence of repeated judicious bathing.

Even the most exacting demands of the most recent ideas are met by this treatment.

Metchnikoff has shown by his interesting studies that inflammation is the phagocytic reaction of the organism to an irritant. Cells are phagocytes, hungry to devour any toxine or microbe that may find entrance into the blood.

We may successfully aid the system in this " reaction against toxines " by endowing its main vitalizing agent, the nerve-centres, with vigor, by furthering elimination from the skin and kidneys, by removing hyperæmia of the organs, and facilitating the passage of phagocytes into the tissues ; but more especially by rendering the blood more alkaline, and thus more favorable to the phagocytes.

A lack of recognition of these principles involved in the Brand bath in typhoid fever leads to disappointment and disaster.

If, for instance, the temperature and duration are not properly adapted to the case, the shock and subsequent stimulus are modified ; if the frictions of the surface are omitted, the widening of the peripheral vessels is prevented and cyanosis will result, instead of the ruddy hue of the skin, with consequent depressing effect upon the heart. The latter, instead of being aided by the tonic widening and responsive elasticity of the cutaneous vessels, will remain contracted, and thus embarrass the heart.

Collapse ensues, with feeble pulse, Cheyne-Stokes-like breathing, an effect so rare after the application of this bath according to its correct *rationale* that I have never

seen it, but an effect of which we often hear, in discussion, attributed to the cold bath, instead of its improper application.

That there is need for a good deal of missionary work on this subject I have frequent opportunity of observing. As an example, allow me to briefly cite a case in point. Two months ago I was asked to see, in consultation with an intelligent and experienced colleague, a child of two years, in the latter part of the third week of scarlatina. Desquamation was proceeding. The child was suffering from enormous cervical glands, jactitation with partial stupor, very high temperature, feeble pulse—in short, a clear case of sepsis. The attendant recited the difficulty of controlling the temperature by aconite, phenacetin, quinine, and concluded with the statement that even baths, against which he claimed to be prejudiced, had proved ineffectual because the child collapsed in them.

On inquiry I learned that the baths were applied fifteen minutes, beginning with a temperature of 110° F., and reducing gradually to 80° F.! If a correct *rationale* had been followed, such a bath would not have been ued

The object in view was to lull the patient to rest, to reduce temperature and improve the heart's action. That a temperature of 110° F. would produce the opposite effect it would seem patent enough even to one who has not studied the *rationale* of hydrotherapy.

But to disturb a child in this condition by the splashing and noise necessary to reduce the bath to 80° F., to allow water at such a low temperature to come into contact with a tender partially denuded skin, even by slow degrees, is entirely opposed, as you will perceive, to the *rationale* I have offered. A bath of 95° F. for eight minutes fulfilled the indications effectively.

A few days ago a phthisical patient in my wards at the Manhattan Hospital, who was receiving considerable benefit from a dry pack, followed by ablutions at 80° F., reduced daily until 60° F. was reached, was asked how he liked the cold ablutions. His reply was that he liked the treatment, and that he had received it in another hospital where they had even put him in tubs of ice-water.

Patients subjected to improper hydriatric procedures fortunately do not die from them, they do not even suffer materially in most cases, but the remedial effect is neutralized, if not entirely thwarted, by a disregard of the true *rationale*, and thus hydrotherapy comes into unmerited disrepute.

This is my chief reason for bringing this subject to your attention. I ask you to give the same clinical study to the remedial uses of water which you have devoted to the study of medicinal agents (not, however, to the neglect of the latter). I ask you not to condemn this valuable agent until you have tried it fairly according to the principles which are briefly pointed out in this paper, and which will amply repay more elaborate investigation. Having mastered these principles you will find that the clinical application of water will afford you not only an auxiliary to the ordinary treatment of diseases, especially those which have become chronic and intractable, but in many desperate cases it will prove a last but effective resort.

In chlorosis that has resisted iron, in the various obstinate digestive troubles, in phthisis, chronic rheumatism, and neuralgia, in neurasthenia and other functional neuroses, in the faulty nutrition of many organic diseases, I have been able to confirm the opinions of Draper, Semmola, Erb, Charcot, Leyden, and other clinicians, that we have in hydrotherapy an agent of great power which is not sufficiently recognized by the profession. I have come to regard no case as hopeless until a judicious and methodical application of water has proven ineffectual.

Dr. Heinrich Paschkis has assumed editorial management of the *International Klinische Rundschau* of Vienna, formerly edited by Dr. Arthur Schnitzler.

THE ACTION OF ELECTRICITY ON THE SYMPATHETIC NERVOUS SYSTEM.[1]

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NEW YORK.

THE influence exerted by electricity upon the sympathetic system of nerves is a subject of exceeding interest. There can be no question in regard to the phenomena that attend the direct applications of either current in physiological investigations, and it is not surprising that those who first witnessed these phenomena regarded them as significant of the possibilities of this agent in the treatment of diseased states of the central nervous system. Unfortunately, external or percutaneous applications of electricity—galvanic or faradic—failed in great measure at that time to substantiate the hopes entertained, and the therapeutic results in those cases where the sympathetic was supposed to be involved, were altogether unsatisfactory. We do not have to seek far for the causes of this failure. They are to be found in an incorrect appreciation of the relation of electricity to the human body, based upon an imperfect knowledge of the physics of electricity, and the lack of suitable appliances and instruments of precision.

In view of the wide field opened to us, in case it can be demonstrated that in therapeutic doses electricity can be made to appreciably affect the deeper nerve structures, it seems to me most desirable to gather together some of the facts bearing upon this interesting question. This seems to be the more necessary because there are many who honestly doubt the possibility of electrically stimulating any part of the central nervous system by ordinary percutaneous methods of application. Certainly no one who has witnessed an execution by electricity can doubt its power to directly influence the most distant organs; and if fifteen hundred volts will instantly paralyze every bodily function, would it not be strange if fifty volts, or one-fiftieth of the power necessary to kill, possessed no influence on the brain and the deeper-seated nerve-structures? Reasoning from analogy, the facts are all in favor of this probability, for in the administration of drugs far less than one-fiftieth of the dose necessary to destroy life is often productive of appreciable therapeutic effects.

We possess very few pathological facts in support of the sympathetic origin of disease, and therefore, in studying this question, and the one that I am about to briefly consider, viz., the action of electricity on the sympathetic, it will be instructive to refer, 1, to the effects of electrization on the exposed sympathetic, and to a few of the ascertained facts in regard to the influence of the sympathetic on the functional activity of various organs; 2, to ascertain phenomena observed after percutaneous applications in the neighborhood of the sympathetic; 3, to clinical observations illustrating the effects of applications of electricity to the neck in certain conditions supposed to be dependent upon disorders of the sympathetic.

Beginning with the original experiments of Claude Bernard as far back as 1832, we find that division of the sympathetic causes a multitude of phenomena. The cornea flattens, the pupil contracts, the globe of the eye retracts, the palpebral fissure decreases in size, the conjunctiva reddens, and there is a very positive elevation of temperature due to a general dilatation of the vessels of the head and neck on the side operated upon. Electrical stimulation of the cephalic extremity of the severed nerve, on the contrary, causes the vessels to contract, and all the various phenomena to disappear for the time being.

The influence of the vaso-motor nerves of the eye was made evident a century ago by the investigations of Pourfour du Petit. The vessels of the iris dilate on division of the sympathetic, followed by immediate contraction when the peripheral extremity of the nerve is submitted to electrical excitation.

[1] Read before the American Electro-Therapeutic Association, September 25, 1894.

Brown Séquard, experimenting upon guinea-pigs and rabbits, by dividing the cervical sympathetic, found after the lapse of a few months an appreciable atrophy of the brain of the same side.

That the intercranial blood pressure is in some degree regulated by the cervical sympathetic, seems altogether probable on account of the anatomical relationship. The nerves of the pia mater, and those associated with the vessels of the cortical substance, are traced back to the sympathetic plexus, irritation of which causes immediate contraction of the cranial vessels. Perhaps the most conclusive experiments in this direction were made by Fisher[1] in 1875. With the aid of a hæmato dynamometer, he was enabled to show that faradization of the exposed sympathetic of a horse resulted in a constant increase of arterial pressure, as well as increased tension of the arterial walls.

Intestinal peristalsis is undoubtedly more or less under the influence of the sympathetic; the movements of the intestines in animals being arrested on irritation of the splanchnic nerve, while the thoracic and abdominal sympathetic impart accelerating influences to these movements. The uro genital apparatus also, including the bladder, the ureters, seminal vesicles, and the uterus, respond to experimental irritation of the sympathetic plexus of the abdominal cavity.

The secretory processes of the body depend largely upon the influence of the vasomotor branches of the sympathetic, the secretion of the gastric juice being carried on automatically by the ganglia situated in the walls of the stomach. The nutrition of the mucous membrane must in a measure be dependent upon this system of nerves, since extirpation of the solar plexus is followed by hyperæmia, extravasation of blood, and ulceration. Stimulation and extirpation of the abdominal sympathetic plexuses, affect the intestinal secretion, the evacuation, and the general nutrition of the intestines. The vasomotor nerves of the liver are derived from the sympathetic. These nerves have their origin near the floor of the fourth ventricle of the brain, entering the sympathetic, and thence with the blood-vessels pass to the gland itself. Puncture of these vasomotor nerves produces paralytic dilatation of the vessels and the production of sugar—the same results that follow puncture of the floor of the fourth ventricle itself. These effects were supposed to be produced by stimulation, but the experiments of Cyon and Aladoff, in 1871, made it quite evident that the appearance of sugar in the urine came not from stimulation, but from paralysis, of the sympathetic. Not only did they find that removal of the cervical ganglia of the sympathetic was invariably followed by diabetic symptoms, but also when the nerve-branches, central and peripheral, with which it is connected, are divided. Interference with the function of the sympathetic affects the excretion from the kidneys in more ways than the elimination of sugar. Albuminuria, hæmaturia, with quantitative and qualitative changes in the urine, together with disturbances in the nutrition of the kidney and suprarenal capsules, have often been observed. The spleen and the entire genital apparatus also have intimate connection with the sympathetic through their nerve-supply, irritation of which produces marked circulatory disturbance in both the spleen and penis.

Burckhardt[2] and Ziemssen's[3] experiments upon the dead body indicate the possibility of directly affecting the cervical sympathetic through percutaneous application of the galvanic current. They thrust partially insulated needles into the sympathetic from behind, connecting their free ends with a sensitive galvanometer. Electrodes connected with a galvanic battery were placed, one near the angle of the lower jaw, and the other at the manubrium sterni, and when the circuit was closed the movements of the needle indicated the action of an electric current on the nerve itself.

[1] Deutsches Archiv fur Klinische Medicin.
[2] Ibid., 1878.
[3] Die Electricitat in der Medicin.

Again, if one electrode, the anode, is placed at the manubrium sterni, or in the neighborhood of the cilio spinal centre, and the cathode at the inner border of the sterno-cleido muscle, a little below the auriculo-maxillary fossa, and a current of sufficient strength employed, the pupil of the same side may be made to instantly dilate on closing the circuit, followed by a gradual contraction. The difficulty of demonstrating this phenomenon in most persons is due to their susceptibility to the action of the current, many suffering from extreme vertigo, and even nausea and faintness, before the current is sufficiently strong to produce contractions visible to the unaided eye. By the aid of the pupillascope, however, it has been found possible to detect these changes in the eye with even exceedingly weak currents. Changes in the pupil so slight as to escape direct observation, are yet associated on the retina with what are called dispersion circles, the character of which accords with the degree of contraction or dilatation of the iris. While it seems to be entirely probable that the dilatation and subsequent contraction of the pupil on closing the circuit, are due to the action of the current on the sympathetic pupillary branches, nevertheless, it is impossible not to take into consideration the fact that reflex influences are potent factors frequently in the movements of distant parts, and therefore in these experiments there is some ground for the claim that pupillary changes may be reflex in character.

The circulation is unmistakably influenced by strong and prolonged applications of electricity to the neck and neighboring parts, and the reason why the test fails experimentally in so many cases, is because of the inability of the ordinary subject to endure the necessary strength of current.

In the many tests that I have made to determine whether or no it is possible to get any appreciable electrical effect upon the sympathetic by percutaneous applications, I have occasionally met with interesting and suggestive results. Everyone who has much to do with the medical application of electricity, is aware how varied is the susceptibility to its effects. The two following records are interesting illustrations of this fact, and of the probability of direct electrical stimulation of the sympathetic by external applications.

Case I.—Male, aged thirty-one, with a normal pulse of 75. An electrode of plastic sculptor's clay, 3 ctm. in diameter, and connected with the positive pole of a galvanic battery, was applied to the hollow just above the clavicle, at its juncture with the sternum. The current was gradually increased to 75 m., which caused a decrease in the frequency of the pulse of ten beats in less than one minute, and this decrease in the rapidity of the heart's action continued so long as the electrodes remained in position. On removing them the pulse would almost immediately increase to its normal frequency, and also the respiration, which was invariably affected equally with the pulse. The results in this case clearly depended for the most part on stimulation of the inhibitory fibres of the pneumogastric, and the fall in the heart-beats may have borne no relation whatever to the sympathetic system. None the less, however, was the test of value in demonstrating the possibility of influencing the deeper-seated nerve-structures by currents of sufficient strength. Only occasionally can a person be found who can endure such a strength of current through small electrodes, and placed as indicated; but few opportunities, therefore, have been afforded of getting so striking a result. I have observed the good effects of electricity in chloroform poisoning, but not through the use of the galvanic current, the tendency of which is undoubtedly to inhibit the action of the heart. The induced current, as ordinarily applied, certainly does not affect the inhibitory fibres controlling the action of the heart, and its undoubted influence over respiration must be ascribed to the action of the current on the accelerating fibres of the vagus and sympathetic that refer to the respiration. The induced

current of electricity, therefore, does good in chloroform narcosis in increasing respiratory activity, the strength of current necessary for this purpose being insufficient to materially interfere with the movements of the heart through its action on the inhibitory fibres of the vagus that control it.

The next record, as compared with the first, illustrates how varied are the susceptibilities of different individuals to the effects of electricity.

CASE II.—Female, aged twenty-three, with a normal pulse of 72. Electrodes of the same size and applied as in the previous case; and yet 15 to 20 m., was all this patient could possibly bear without a tendency to faintness and nausea. Confining the strength of the current to a point below the production of these symptoms, it was most interesting to note its very positive effects upon the pulse. This effect was not immediate, as in the former case, when currents of far greater strength were used; but by keeping the electrodes in position for several minutes, it was found that the pulse would invariably sink to 65. I have at the present time under observation a young man aged twenty-two, with a remarkably torpid circulation. His pulse seldom rises above 48, and under the influence of a strong current it can at will be reduced to 43. If these effects upon the pulse are due, as is probably the case, to a stimulation of the inhibitory function of the pneumogastric, it is only an additional argument in favor of electrically influencing the sympathetic; for if the vagus is influenced by percutaneous applications, the sympathetic ought also to be affected as the threads of current pass from pole to pole.

Exophthalmic Goitre.—In support of the sympathetic origin of exophthalmic goitre, we have the well known fact that division of the cervical sympathetic in animals is followed by a train of symptoms that are most suggestively in accord with those of Basedow's disease, and the further fact that in a certain limited number of cases pathological anatomical changes have been found in the sympathetic after death.

Among the many special phenomena that point to this causal relationship, there is one of special interest referable to the eye. It is a common observation that ordinarily, when the plane of vision is altered, the movements of the eyeball upward or downward are closely followed by the upper eyelid. In exophthalmic goitre the eyelid does not follow the movements of the eyeball, and the cause of this deficient mobility Von Graefe ascribed to innervation of Muller's unstriped ocular muscles, which receive their nerve-supply directly from the sympathetic nerve. To my mind, however, one of the strongest arguments in favor, not only of the sympathetic origin of this disease, but also of the possibility of directly influencing the sympathetic by the galvanic current, relates to my personal experience in the treatment of exophthalmic goitre.

I published in the New York MEDICAL RECORD of September 30, 1893, an article on the treatment of this disease, based on 45 consecutive cases, in which the results of electrical treatment were so pronounced in a large proportion of the cases, that, admitting the disease to be dependent on sympathetic disturbance, there can be little question but that these results were in the main due to the action of the current upon the sympathetic. The following case furnishes very strong evidence in support of this assertion.

CASE III.—Miss C——, aged twenty-three, came to me in September, 1893, with the three cardinal symptoms of exophthalmic goitre quite distinctly present. The pulse was 115, the eyes prominent, and the thyroid considerably enlarged. These symptoms had been coming on for about three years, and in connection with the protuberance of the eye, the patient called my attention to a marked dilatation of the pupil of the right eye, which she only observed a few weeks before, and shortly after the occurrence of a feeling of pressure in the neck and a slight feeling of suffocation. The tumor was highly vascular, made of tortuous blood-vessels, and not of firm thyroid tissue.

It was evident that the oculo-pupillary fibres of the sympathetic were involved, and that the irritation causing the well marked and persistent mydriasis must be due to the pressure of the enlarged blood vessels upon the sympathetic. Applications of the galvanic current were soon followed by some appreciable amelioration of the symptoms, but the point most interesting was the fact that the pupil began immediately to decrease in size, and became entirely normal, before there was any change in the prominence of the eyes, the rapidity of the pulse, or even in the size of the thyroid itself. Such pressure, however, as had been sufficient to produce this oculo-pupillary symptom had been relieved, and this could have only come through a contraction of the enlarged vessels, and through treatment having a direct influence over the sympathetic.

We have in this case an illustration of a simple irritation as distinguished from a paralyzed condition of the sympathetic. I am aware that damage to this nerve more frequently produces a paralysis with myosis than a simple irritation with mydriasis, but it has been shown that those causes that produce ultimately a paralysis of the sympathetic, may primarily induce only irritation. A case was reported by Ogle of an abscess of the neck which, as it enlarged, occasioned extreme dilatation of the pupil; the dilatation disappearing after a quiet sleep. Subsequently the pupil became much contracted, but upon the abscess being opened and the pressure relieved, the pupil became normal. The explanation offered of these phenomena was this: The inflammatory exudation and suppuration associated with the development of the abscess, at first stimulated the pupillary fibres, producing mydriasis. The secondary or prolonged effects of the compression, however, lessened the conducting power of the nerve fibres, inducing paralysis and myosis. In the case which has just been related the condition was primarily one of irritation, which might have merged into one of paralysis, had there been any material increase in the arterial dilatation.

Unilateral Hyperidrosis.—Unilateral hyperidrosis is not of such rarity as to entitle it to special comment, without it offers points of therapeutic or pathologic interest. Notwithstanding the well-known experiments in which severance of the sympathetic in horses produced a profuse unilateral perspiration, the pathology of this somewhat unique symptom has not been definitely settled. Cases of unilateral hyperidrosis, many of them, indicate not the slightest evidence in other respects of sympathetic disturbance, but a few cases have been placed upon record,[1] which seem, with considerable certainty, to point to paralysis of the sympathetic as, in some instances, the cause of persistent unilateral hyperidrosis. A case reported by Seguin[2] indicated on examination no change to the naked eye, but microscopically there seemed to be an abundant granular pigment filling the ganglionic cells, although both sides were alike in this respect. A case reported by Ebstein[3] revealed more definite and pronounced pathological changes. The patient, a man of sixty, suffered from paroxysms of angina pectoris, accompanied by hyperidrosis of the left side. Microscopic examination of the ganglia of the left sympathetic revealed varicose and dilated vessels, with perfectly normal nerve tissue upon the right side. Ebstein therefore claimed that hyperidrosis depended on a temporary or permanent compression of the sympathetic nerve-elements, resulting in paralysis.

The case that I herewith report is of value, not only because of the associated symptoms indicating an involvement of both the vasomotor and oculo-pupillary fibres of the sympathetic, but because the results of treatment gave further evidence of the sympathetic origin of the disease.

[1] Eulenburg & Guttman: Sympathetic System of Nerves, p. 58.
[2] American Journal of the Medical Sciences, October, 1872.
[3] Virchow's Archiv, 1875, Bd. lxii., p. 425, quoted by Eulenburg and Guttman.

Case IV.—Mr. M——, aged sixty-five, was referred to me by Dr. John H. Demorest, of New York. This patient was greatly enfeebled, was suffering from digestive disorders, and in addition I found a profuse unilateral hyperidrosis, involving the right side of the head, face, and trunk of the body, the right arm, and to a less extent the right leg and foot. While the left side was abnormally dry at all times, the right was always moist; the median line, front and back, sharply defining the two conditions. The right ear was also hotter and redder than its fellow, and with it was associated a persistent congestion of the conjunctivæ. In addition to these vaso thermic phenomena there existed a considerable degree of myosis, suggestive of paralysis of the oculo-pupillary as well as the vasomotor fibres of the sympathetic. This patient was subjected to thorough and persistent treatment by both the galvanic and faradic currents of electricity, and with results of the most pronounced character. The patient did not regain permanent health, nor strength, and, indeed, finally died from exhaustion; but the hyperidrosis lessened very considerably after each treatment, and would occasionally almost entirely disappear, while, in an equal degree, the pupil dilated and the heat and congestion decreased. On the whole, it seemed to me a very satisfactory test of the efficiency of electricity in directly influencing the function of the sympathetic.

Hemicrania.—The following case of hemicrania is still another interesting example of the probable part played by the sympathetic as a causative factor in disease, and strengthens one's belief in the power of electricity to directly affect the sympathetic.

Case V.—Mr. F——, aged thirty-three, had for some years been subject to frequent and violent attacks of right hemicrania. Whatever tended to raise the blood-pressure in the head greatly aggravated the distress. During the attacks the temporal artery became hard and tense; the face pale and the eye sunken, with a narrowing of the palpebral fissure. The patient had intermittent attacks of nausea, with alternations of unnatural dimness and clearness of vision; while as the paroxysm subsided, the face became abnormally red, and both the eye and ear considerably injected. The initial and prominent symptoms, such as the condition of the temporal artery, the paleness of the face, and the depressed and altered condition of the eye, all pointed to a persistent contraction of the muscular coats of the vessels on the side supplied by the cervical branches of the right sympathetic nerve; while the nausea and sudden changes in the character of the vision indicated contemporaneous changes in the intra-cephalic blood-pressure, due to repeated changes in the calibre of the small blood vessels. We find also a rational explanation for the secondary injection and increased heat of the face, eye, and ear, in the changes from a condition of tetanic spasm to a state of relaxation and dilatation of the overstrained vessels. Such a very positive condition of tonic vascular spasm could be due only to some disturbance of the sympathetic nerves.

I refer to the treatment of this case by the galvanic current, not because of any very remarkable therapeutic effects, for all efforts were futile in entirely overcoming these paroxysmal attacks, but as an evidence of the possibility of directly affecting the sympathetic. A current strength of fifty m., when applied to the neck during a paroxysm of pain, gave appreciable relief so long as the treatment was continued, and for a considerable time thereafter. No sooner were the electrodes in position—one on the cilio-spinal centre, and the other below the auriculo maxillary fossa, and the current gradually increased until 20 m. were registered, than the pain abated, and as one electrode was moved down toward the manubrium sterni, and the strength increased to fifty m., there was still further relief and change of symptoms. The face on the affected side, which was so pale and sunken, became almost normal in appearance, and appreciably warmer, the ear redder, while the affected eye opened widely; the eyeball standing out as prominently as its fellow. This treatment was often repeated, but with only temporary relief. The tendency to these attacks of hemicrania was not materially weakened, as had been somewhat confidently expected on account of the very marked immediate effects of the treatment.

Progressive Facial Hemiatrophy.—From the fact that this disease has been known to follow mechanical injury of the cervical sympathetic, it seems not improbable that it may be related to the sympathetic, rather than to the trigeminus, with its vasomotor nerves of nutrition.

While, so far as I am aware, there are no recorded cases of cure, or even material benefit, following galvanization of the sympathetic, yet Brunner reports a case where the galvanic current caused a reduction in the rapidity of the heart's action, dilatation of the pupil, with redness and perspiration of the face. Eulenburg and Guttman also report a case of this kind, where galvanization of the neck caused a reddening of the affected side of the face that lasted some hours.

In confirmation of these reports, I recall a case seen some years ago at the clinic of the New York Post Graduate School, in which strong galvanization of the neck quite perceptibly increased the heat and redness of the atrophied side.

Progress of Medical Science.

Treatment of Peripheral Neuritis.—Professor Leyden believes that in the case of neuritis following acute specific diseases, care during convalescence as to nourishment, rest in bed, and avoidance of over-exertion contribute to prevent its occurrence. "Etiological treatment" (removal of the cause) in neuritis due to alcohol or lead, and treatment of the primary malady as in diabetes, is of the first importance. There is no specific remedy for multiple neuritis, and treatment by drugs does not play a very important part. Owing to the fact that rheumatism is not infrequently an element in the etiology, salicylate of sodium and other anti-rheumatic drugs had been used, without producing any good results in the majority of cases. Iodide of potassium was of use only now and then, and mercury was of doubtful value. Antipyrin, phenacetin, exalgin, euphorbia, and methylene blue were sometimes of use for the relief of pain, but it was often necessary to resort to morphine, chloral, sulphonal, etc. Strychnine, formerly much used, but lately fallen into the background, deserved to be tried; by increasing the excitability of the affected muscles it favored the return to normal function and nutrition; it ought especially to be resorted to in progressive cases in which the respiratory movements were threatened. Leyden prefers to use it as a subcutaneous injection, gr. $\frac{1}{10}$ to gr. $\frac{1}{50}$ twice daily. Massage and baths were valuable auxiliaries which were indicated, especially the latter, in the later stages of the disease. General hygienic treatment was of much importance. Rest—as a rule rest in bed—was of the first importance in the early stage; in the later stage, feeding. Finally, in the latest stages of all, moral suasion, rousing the patient's latent energies, was often of great value. Passive movements and encouraging the patient to make active movements, were generally attended with better results than massage in this stage. Electricity, formerly used too much, was now used too little, but its usefulness was greatly limited by the fact that in many cases the pain caused was too great to permit the treatment to be continued.—*Berliner Klinische Wochenschrift.*

Our Present Knowledge of the Cure of Malaria by Means of Quinine.—According to Professor Binz so long as twenty-six years ago he opposed the then generally accepted theory that the curative action of quinine

in malaria is developed through the nervous system, and propounded the theory that quinine in all probability acts as a protoplasm poison on the pathogenic micro-organism, at that time undiscovered, which is at the root of all paludism. It has now been discovered that all forms of malarial fever are brought about by organisms of the genus amœba, which penetrate the bodies of the red blood-cells, at whose expense they increase in size, finally sporulating and destroying their host. Laveran, who first discovered and described the parasite of tertian ague, also investigated the action of quinine on that organism, and found that when microscopical preparations of the parasite were treated with quinine, the vitality of the disease-germ was speedily destroyed, a fact which has been substantiated by Marchiafava, Celli, Grassi, and Feletti. The influence of quinine on the malaria parasites has also been studied by examining the blood of malaria patients before and after the exhibition of the drug. In this instance the investigations of Laveran, Romanoffsky, Bacelli, Golgi, Marchiafava, and Bignani established the fact that the parasites were killed by the quinine absorbed into the blood.

Dr. Mannaberg, who has recently investigated this question in the malarial districts of Dalmatia, Istria, etc., finds, among other things, that about three hours after the exhibition of from seven to fifteen grains of quinine, the amœboid movements of the amœboid form of the parasite of tertian ague slacken to a very perceptible degree, and that after a lapse of a further period of three to six hours, the number of parasites in the blood of the patient greatly diminishes, while many of those still left are torn and mutilated. On the full-grown parasite of tertian ague quinine either produces a complete cessation of all movement in the pigment, whereby the parasite acquires a glittering, cloddy appearance, as though coagulation had set in, or else dropsical swelling is set up, or, finally, the parasite falls to pieces. Shortly after the exhibition of quinine, medium-sized parasites of tertian ague develop intense activity. It appears that quinine possesses a stimulating action before causing coagulation and immobility. This phenomenon has also been observed by Bacelli. According to Golgi, the medium-sized parasites of quartan fever acquire a glittering appearance and tendency to shrivel when the patient receives quinine internally; the large forms, however, become distended, their pigment exhibits lively oscillatory movements, and they frequently contain vacuolæ or abortive spores. About three hours after the exhibition of a dose of seven and one half grains of quinine, the nucleoli of some of the amœba of the milder forms of true quartan had either partially or entirely lost their tinctorial characteristics. After twelve hours of the treatment stainable nucleoli were hardly met with at all, most of the parasites having broken up into irregular fragments. From these and other experiments it is evident that the amœba of malaria is not only visibly enfeebled by the presence of quinine in the blood, but that its capacity for producing viable spores is greatly diminished. In those forms of malaria which are not curable by quinine that drug has no effect whatever on the parasites present in the blood. Bacelli, however, has found that many such severe forms which defy the ordinary method of treatment may be speedily cured by injecting the usual dose of quinine into a vein.

In spite of certain differences on minor points, Mannaberg and the other investigators one and all agree that quinine is a direct poison for the malaria parasite, and that the therapeutic doses employed are non injurious to the cells of the human organism. Any assistance from the nervous system in the process of cure is neither evident nor necessary. With regard to the prophylactic action of quinine, it is to be noted that the drug disappears very gradually from the blood and in an almost unaltered condition. By this means any young amœbæ and spores are kept in constant contact with the drug, and are thereby checked in their further development. As to the part played by the leucocytes, it appears that phagocytism is prominent in cases of spontaneous cure of malaria, but not when quinine is employed.—*Provincial Medical Journal.*

The Relation of Bacillus Coli Communis to Typhoid Fever.—According to Dr. Kellogg it will be remembered that in 1887 Hueppe called attention to the possible pathological importance of the colon bacillus, having found this organism in nearly pure cultures in cases of cholerine. In 1889 Roded and Roux made extensive investigations of this bacillus in relation to typhoid fever in which the conclusion was reached that the typhoid germ is a modified colon bacillus. Several investigations have been recorded of outbreaks of typhoid fever resulting from the use of the water from a common source, usually a well, from which no typhoid bacillus could be found, but the colon bacteria were present in large numbers. The claim that is made at present by certain bacteriologists is that the colon bacillus, which ordinarily possesses very little pathogenic power, can be made sufficiently virulent to produce an effect similar to that of the Eberth or typhoid bacillus.

Another interesting fact is the observation that the colon bacillus becomes increased in virulence during an attack of typhoid fever. Vallet has shown that rabbits that were inoculated with the filtrate from vaults containing excreta from typhoid-fever patients were protected to an appreciable degree against the inoculation of the typhoid bacillus. This experiment serves to explain the fact, so often noted by sanitarians, that visitors to an infected locality are more likely to suffer from the disease than the residents who are accustomed to drink the contaminated water. After certain experiments, which are too lengthy to record in full, Kellogg draws the following conclusions, based upon his own work and the results of other investigations: 1. The bacillus coli and the bacillus of Eberth are so nearly identical in their biological characters that none of the numerous methods proposed for distinguishing them can be relied upon as giving constant results. 2. The bacillus coli gives in inoculation experiments identical pathological effects with those produced by the bacillus of Eberth. 3. The bacillus coli acquires, by passing through the body of an animal, biological characters closely resembling those of Eberth's bacillus. The bacillus coli found in vaults is much more virulent than the bacillus coli of the intestines or Eberth's bacillus. 4. The bacillus coli is much more resistant than the bacillus of Eberth, and thrives in vaults, while the bacillus of Eberth quickly dies under the same conditions. 5. The study of epidemics, and the bacteriological study of waters which have given rise to typhoid fever, lead to the conclusions that the bacillus coli at least shares with the bacillis of Eberth the property of producing typhoid fever under certain circumstances, and that the bacillus of Eberth may be only a variety or modified form of bacillus coli. 6. The contaminations of milk with the excreta of cows is a possible source of infection with the bacillus coli and with typhoid fever. 7. The same care ought to be observed in the protection of water used by cows kept for milking purposes from contamination from excreta, as for that used by human beings for drinking purposes. 8. Since vaults and cesspools constitute depots in which the comparatively innocuous bacillus coli acquires malignancy and virulence, rendering it highly destructive to human life, these convenient nuisances should be prohibited by law, and the destruction or disinfection by proper agents, or conveyance to a safe distance from human habitation, of all alvine discharges, should be compulsory as one of the most important means of conserving the public health.—*Medical and Surgical Reporter.*

A New Convalescent Hospital.—Mr. Yarrow, the English builder of torpedo-boats, has recently given $600,000 to build and endow a hospital for convalescent children at Broadstairs.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE SIMS' STATUE.

THE dedication, in this country at least, of an heroic statue to a medical man marks an important era in medical history. Dr. James Marion Sims, dead over ten years, comes again to us in the earthly immortality of bronze and granite. He once more looks at us as of old, with gentle persuasiveness and calm conviction, the index of a life well spent, the unchangeable impersonation of a living principle. When the present generation shall have passed away, he will remain through coming seasons and fleeting years, for unborn eyes to look upon and coming tongues to speak his praise. The benediction of his good works will thrill the enthusiasm of future workers in every line of human progress. It is pleasant to think that his example can be constantly with us and continuously extend into the beyond. The lesson of his life is now written, the lovable memory of his past struggles, and the cordial recognition of his final triumphs, are new incentives for lofty purposes and noble emulation for persistent endeavor. He was the founder of a new medical faith, and his works live after him. As the father of modern gynecology, he becomes the exponent of a living thought constantly widening and progressively extending. Time has now so softened the asperities of criticism, and calm judgment has so cooled the temper of envy, that no one will now question his genius or doubt his talents. The statue as it stands is the final vindication of his faithful work, and the lasting tribute to his duty done.

It is, therefore, with no small degree of pride that the MEDICAL RECORD recalls its initiatory efforts to do him honor, and likewise does it congratulate the many subscribers, in this and other countries, who through its columns so promptly and generously contributed to the fund. The heartiest thanks of the many friends and admirers of Dr. Sims are also due to the distinguished gentlemen who have so long served on the committee, and who have so faithfully discharged the duties of their high office. In evidence of this is the statue itself, which is acknowledged by competent authorities to be the best conceived and most artistically executed of any in the city. That the contributors to the fund, and the members of the profession throughout the world, may judge of this fact for themselves, we have the pleasure of presenting in this number of the MEDICAL RECORD a full-page illustration of the statue as it now stands in Bryant Park.

In completing the history of the monument, it is proper to add that the receipts and expenditures on account of the fund, submitted to the committee by William Wood & Co., treasurers, have been duly audited and found to be correct. And thus endeth our loving part in memory of an old friend.

COLLEGE ATHLETICS.

AT a recent meeting of the Boston Society for Medical Improvement, Dr. W. M. Conant read a paper on the "Educational Aspect of College Athletics," and it was discussed at length by a number of prominent physicians and laymen. The net result, we must confess, is rather disappointing; for no particularly new facts were brought out, and there was a most placid unanimity of opinion to the general effect that college athletics form a beneficent factor in education. It hardly requires a special meeting of savants to determine this point. What one would like to know is the amount of evil connected with athletics, and how this can be prevented. The directors of gymnasia, trainers and physical educators, furnish us interesting reports showing the increase under training of the circumference of the arm and the expansion of the chest. But they do not tell us of the hypertrophied hearts, crippled limbs, and lowered scholarship. Among the 3,000 students at Harvard, we gather from Dr. Conant that about 400 engage actively in college athletics. He gives us a list of about 70 foot-ball injuries per year among some of the latter. These are rather inadequate data. It has often been urged that one evil of competitive athletics lies in the fact that the system practically puts on the shelf the weaker men, who have no special aptitude or inclination to athletics, but who especially need physical culture. All that is left to these are the inanities of wooden dumb-bells, wands, and clubs, things which no self-respecting intelligence will long put up with.

It is admitted that college athletics tend to disparage scholarship, but to what extent no one seems to know.

In fact, the only suggestive thing in the whole discussion is a remark by the Mayor of Cambridge, who expressed surprise that college authorities do not personally supervise and teach athletics, since they admit that physical culture is of so much importance. The exercises of intellectual culture are rigidly controlled, but physical culture is left largely to the student's inclinations or whims.

THE DOCTOR AND THE BICYCLE.

SHALL the doctor ride a bicycle? It is too late for an answer to this question. He already does it. The wheel has evidently come to stay, as a source of recreation to the busy physician, if not used by him as a means of locomotion in making his rounds. It is probably even too late for us to discuss the advisability of the professional sister striding the two-wheeled steed. She has not only taken to it most kindly in common with many of her sex, but has already begun to give them practical information concerning the proper way to ride, so as to gain the greatest benefit with the least danger of injurious effect. We have already called attention to Dr. Laura Liebhardt's discussion of the question before the Colorado State Medical Society, in which the advice is given, among other things, not to mount during the first days of the menstrual flow, or at least only for short hill less rides.

Undoubtedly injury may be inflicted upon the perineal

region by a faulty saddle-pressure too long kept up and accidents en route; but taking into consideration the amount of bicycling now indulged in, it must be admitted that the physician is not often called upon to prescribe for any results of injudicious riding. On the other hand, those who have carefully watched this mode of exercise from its therapeutic side, must have observed the benefit derived from its proper use in many conditions of non-health. In its present perfected state, the pneumatic-tired "safety" is a very different machine from the "velocipede" of the sixties and the "ordinary" of the transition period of its evolution; and it is now, for the first time in the history of two-wheeled travel with the rider as the propelling force, that the serious attention of the medical profession is demanded.

In just how far we are justified in prescribing or forbidding it—especially for young girls; what are the dangers to warn against; at what point does benefit cease and injury begin? These are questions for the physician to decide—not from his own narrow views and preconceived ideas as to the fitness of things, but from a true scientific study of the question. For himself he can decide whether he considers it dignified or judicious to visit his patients awheel. If the distance is too great for him to arrive in a presentable condition, he had better stick to his chaise. If the case is one of urgency and he can get there quicker, he need not fear the condemnation of the anxious sufferer.

But whether he goes adriving, ariding, awheel, or a foot, the doctor must bless the bicycle, for it has done more, and probably will do more, for the cause of good roads throughout the country than any other one thing, and no one knows better the necessity of good roads than the doctor.

PHYSIOLOGICAL EPOCHS THAT PREDISPOSE TO INSANITY.

At a recent meeting of the Medical Society of the County of New York, a paper read by Dr. William M. Spratling, on the "Physiological Epochs that Predispose to Insanity, with Observations on the Management of Each," presented in clear and definite form certain facts too often overlooked and ignored by the general practitioner and the public at large. The grave responsibility of treating insanity in its incipiency rests in greater degree upon the physician in general practice than upon the specialist in diseases of the mind. The family doctor sees usually the first signs of incipient mental disorder, when its early recognition and proper treatment may secure the happiest results.

Mercier concisely sums up the causes of insanity in this way: Insanity is, in mathematical terms, a function of two variables; that is too say, there are two factors, and only two, in its causation; and these factors are complementary. Both enter into the causation of every case of insanity; and the stronger the influence of one factor, the less of the other factor is needed to produce the result. These factors are heredity and stress. A study of the various states of mental instability arising directly from physiological epochs, proves conclusively and without variation that heredity and stress, with their subdivisions, constitute the only etiological factors. There are six distinct epochs at which insanity may appear, all but one being strictly physiological in the order and nature of their occurrence. This one, the epoch of heredity, may be called patho-physiological. Early childhood, puberty, maternity, the epoch of heredity, the menopause, and senility, are these fixed times in which stress may serve to destroy mental health. Early childhood is the period of life beginning with the seventh month and ending with the beginning of the seventh year, and may be in itself said to predispose only indirectly to insanity through its accidents and incidents. Puberty in the female extends from the thirteenth to the fifteenth year; in the male, from the fourteenth to the sixteenth. The third physiological epoch covers the entire childbearing period, from the fifteenth to the forty fifth year. Insanity occurs more frequently during the first than during the latter half of this period. The epoch of heredity has not had special attention called to it by writers in this country, though it is an important and variable one. It embraces that critical period of the life of any individual whose ancestors have been accustomed to exhibit evidences of insanity on reaching a certain age. Régis uses the term phrenasthenia to designate and include all forms of inherited insanity. The fifth epoch is that of the climacteric, from the forty-third to the forty-fifth year. Exceptionally, the time may be extended a little either way. The changes that now occur are the most clearly perceptible of those of any epoch, and lead oftener to mental instability. Senility is the last epoch, old age; and it is interesting to note that, when the preceding epochs have not been strictly physiological, pathological conditions of mind are apt to appear in extreme old age.

Early childhood presents the possibility of many accidents and incidents that may serve to render the child mentally unsound in the future. Gowers is authority for the statement that one-eighth of all the cases of epilepsy begin during the first three years of life; and adds that, with rachitis as a combining cause, seventy-five per cent. of all cases of epilepsy that begin during the first three years of life are due to infantile convulsions ascribed to teething. Here the various tendencies of an inherited taint change a perfectly physiological process, that ought to be free from danger to the child, into a period fraught with influences of a most pernicious kind. Syphilis, chronic alcoholism, insanity, or epilepsy, in the parent, stamps on the child's nervous system a congenital instability that unfits it to pass unscathed through the serious disturbances that mark the steps of growth and development. Dentition alone is probably never a cause of genuine epilepsy; what it does give rise to are epileptiform convulsions that in time take on the character of true epilepsy. That insanity often follows epilepsy is well known. Clouston states that cases of prolonged delirium ending in idiocy, and arising out of the ordinary convulsions of dentition have come under his observation. And such cases have also ended in true epilepsy, followed by insanity. Adolescent insanity has appeared so often, as well as other forms, in persons earlier the victims of epilepsy, that it is impossible to regard the two as coincident.

In the *Journal of the American Medical Association* for August 18, 1894, Wilmarth gives some interesting facts concerning idiocy, epilepsy, imbecility, and insanity, as he studied them at the Pennsylvania Institute for Feeble-minded Children. Out of one thousand

cases admitted to the institution, he found that there were three hundred and twenty-two whose condition required medical treatment before entering, and whose afflictions were of such a nature as to indicate that medical treatment would possibly bring about a cure. In this list, all cases not amenable to medical treatment are excluded, together with cases in which congenital defect was noted before the sixth month, or just before the commencement of dentition. In seventy-five cases out of the three hundred and twenty-two, the disorder had developed during the spasms of dentition; in two cases, before the sixth month; in twenty-nine, between the sixth and twelfth; in twenty-five, between the twelfth and eighteenth months; and between the eighteenth month and the twenty-fourth, nineteen cases are recorded as first showing evidences of mental disease. The growth of a little child's brain is rapid up to the seventh year, and anything which interferes with its nutrition is a serious matter. Besides dentition, traumatism, blows or falls on the head, the effects of excessive heat, mental shock, fevers of specific origin, and structures and malformation of the genital organs, are causes that act unfavorably upon the organism and threaten to disarrange its more highly developed parts.

The excito-motor exaltation during the first dentition has its parallel in the explosive condition of the nerve-centres, in the higher plane of cerebral activity, during the evolution of the generative function and of the sexual divergence of early adolescence. Such epochs may be characterized as the search-lights of psychiatry, since they serve to reveal weak spots in the mental organization. The mental disorders that so frequently develop at this age, are due to indirect stress of internal origin. Pubescent insanity may develop anywhere between the ages of fifteen and twenty-two. The epoch of puberty is attended with more danger to the female than to the male, the time is shorter, and the shock is greater. Insanity in the female at this epoch is essentially an acute neurosis, acute mania being its commonest form. Acute mania is also the commonest form of puerperal insanity. Hallucinations appear in about one-quarter of the cases in both sexes, those that are visual and aural predominating. Delusions of poisoning exist frequently, and spiritual delusions are not uncommon. When uncomplicated by hereditary taint, the prognosis is good. Nearly four-fifths of persons thus afflicted recover. Early removal from home is best. Nourishment easy of digestion should be given, and the secretory and excretory organs should receive special attention, since they are liable at this period to sluggish action. Sleep must be secured by open-air exercise and by hypnotics; and narcotics and sedatives avoided. Menstrual irregularities, anæmia, etc., require the strictest hygiene, and the use of carbonate of iron, extract of nux vomica and rhubarb in pill form, malt extract, etc.

Pregnancy, labor itself, and lactation, have more important relations to insanity than other physiological epochs. Insanity during pregnancy is more frequent among women about to give birth to an illegitimate child. Mental anomalies vary all the way from simple morbid appetites to well-marked melancholia with suicidal impulses. Transitory frenzy during labor appears as the forerunner of puerperal delirium. Infanticide and suicide are acts common to the subjects of this condition. Mental derangement may come on suddenly after childbirth or develop gradually after evidences of nervous exhaustion, most frequently appearing as acute mania. Begin treatment with a saline aperient, and search for and remove causes of fever. The condition of the blood may require iron; but none of the chalybeate preparations should be used till all traces of acute excitement have subsided. The infant must be removed from the mother's care. The mother's diet must consist of milk, beef-tea, broth, and eggs, administered in small quantities at frequent intervals. To secure sleep, the following may be used: chloral, bromide of potassium, sulfonal; paraldehyde, two-drachm doses, or more if required, in a small quantity of port wine. Warm baths often suffice to produce refreshing sleep, and, whenever possible, deserve a trial before drugs are given.

The fifth physiological epoch is the menopause. Psychic manifestations are well marked. Whenever there is inherited tendency to mental disease, or when there have been earlier attacks of insanity during one of the former epochs, the menopause has added dangers. Climacteric insanity, Skae characterizes as a monomania of fear, despondency, remorse, hopelessness, passing occasionally into dementia. Over half of all cases are of the depressed type. Treatment consists mainly in a tonic regimen, out-door life, strict attention to diet, and change of surroundings. Iron and arsenic are required, artificial feeding is often necessary, and sleep must be secured by hypnotics. Chloral hydrate, in a single large dose, and paraldehyde, are the best. Senile mania and senile melancholia occur as distinct disorders. The most satisfactory drug for the treatment of insanities incident to old age is opium, beginning with small doses. The danger of establishing the opium habit is less than if the patient were in the prime of life. Persistent insomnia and great restlessness are overcome by opium, which seems to have as powerful an influence over humanity in its second childhood as it has during humanity's earliest years.

MEDICAL UNIVERSITY EXTENSION.

We have often wondered why some active and philanthropic mind did not devise a scheme for applying "University Extension" to medicine. And now we find that it has been done by an association of eminent English physicians, including Drs. Clifford Allbutt, Sir W. H. Broadbent, John Cavafy, J. F. Goodhart, T. H. Green, Hughlings Jackson, S. Wilks, Sir James Paget, Sir J. M. Humphrey, and Mr. Jonathan Hutchinson.

They term their movement the "Clinical Research Association." It proposes, as we understand, to furnish the general practitioner a convenient means of having all forms of bacteriological, chemical, and microscopical information made accessible to him and his patients.

THE RECOGNITION OF MERIT.

The Germans have their jubilees, and the English their "presentations." We notice in a recent issue of *The Lancet*, that Dr. Walter Murray was presented with a clock for his bravery in going to the rescue of a policeman. Also, that Dr. Symington has been presented with a tea-tray for causes not stated. The habit of giving some

formal recognition to conspicuous merit or long professional service, is surely a most praiseworthy one. We wish that in this country something of the kind might be done. With us the doctor gets recognition sometimes after he is dead, but that is, after all, not so satisfactory to the person most concerned.

THE CZAR'S DISEASE.

To such medical men as have studied the symptoms of the disease of the Czar, as they have been reported in the vague and meagre official bulletins, it must be apparent that the only way to reconcile seemingly conflicting accounts, and draw reasonable conclusions therefrom, is to assume that the diagnosis made by Professor Leyden is the correct one. Contracted kidney, as is well known, is a very common affection in persons addicted to the pleasures of the table and the excesses of the cup. The general condition of the distinguished patient, his corpulency, and attendant lack of vital energy, make him a fit subject for this form of renal disease. The distressing symptoms of paroxysmal cardiac dyspnœa, due to feebleness of compensatory cardiac effort, the pulmonary complications associated with pleuritic effusion, and the general weakness and anasarca caused by the lowering of arterial pressure, are of ominous gravity, and tend in the direction of a probably speedy dissolution. Under the circumstances, it will not be surprising to learn of the appearance of apoplexy, convulsions, or coma, or of an equally sudden termination in syncope, or pulmonary œdema.

A NEW CURE FOR PERNICIOUS ANÆMIA AND LEUCOCYTHÆMIA.

"While sitting alone, and in profound sorrow, in my library, on Sunday morning the 29th of April last, I suddenly saw a great light." It is in this somewhat dramatic way that Dr. I. N. Danforth, whose wife was suffering from pernicious anæmia, begins his description of a new method of treating that disease. The light which he saw was reflected from the following paragraph in a London journal: "Professor Frazer, of Edinburgh, read a paper to the Section of Medicine" (of the Eleventh International Medical Congress, at Rome) "on the Effects of Bone Marrow in Pernicious Anæmia, which attracted considerable attention. He gave particulars of a case in which at the beginning of the disease the hæmatocytes numbered 1,000,000 per cubic millimetre, and the hæmoglobin twenty-five per cent. After a month's treatment, first with iron, then with arsenic, afterward with salol, no appreciable improvement was manifested. At the end of that time bone marrow was administered with remarkable results. The patient gradually improved, and in two months the blood had a composition of 4,000,000 hæmatocytes, and the hæmoglobin had risen to eighty per cent. This case shows, so far as a single case can, that in bone marrow we may perhaps have an effective remedy for what has hitherto been practically held to be an incurable disease."

Dr. Danforth immediately got some bone marrow and began feeding it to his patient, whose condition, despite everything that had been tried, was desperate. She at once began to improve, and in four or five months was comparatively well.

After a time, instead of giving the marrow in its natural state, he cut up several ribs and allowed them to soak in glycerine. He then made the following mixture:

℞. Liq. potas. arsenit. ..... ℥ ijss.
Acid phosphate ..... ℥ iij.
Ext. bone marrow ..... ad ℥ viij.
M. Sig.: ℥ ij. after each meal.

The addition of the arsenic robs the bone marrow of some of the credit. This addition was not made, however, in Professor Frazer's case.

We note also that Dr. W. G. Bigger reports, in a London journal, a case of leucocythæmia in a boy aged twelve. The patient was given three or four slices of bread daily, on each of which the raw bone marrow was thickly spread. The improvement in the boy's condition after the first week was "little short of marvellous." The anæmia and jaundice disappeared, and the skin and mucous membrane acquired a healthy color. The symptoms due to the anæmia at the same time passed off, and in three weeks the boy was able to walk about without shortness of breath or palpitation. The temperature also became normal, and has remained so. *Pari passu* with this improvement in the general symptoms, the spleen diminished in size, so that by the end of a fortnight the lower edge had receded to a level with the anterior spine of the ilium, and the inner edge did not extend beyond the middle line.

The boy eventually became entirely well. Both the cases reported are apparently examples of cures of obstinate and dangerous diseases. If we have a remedy for them in bone marrow, therapeutics has made a remarkable advance.

A NEW WAY TO ADVERTISE.

The following candid announcement appears in *The Texas Health Journal*. "*To the Medical Profession of Texas.*—I have devoted many years to the exclusive treatment of diseases of the eye, ear, nose, and throat. That I might feel doubly assured of my ability to treat these diseases with the best possible skill known to the profession, I spent the last winter, spring, and summer in New York and Europe, where I received the special clinical instructions under the most distinguished specialists in the world. My many months of clinical work at the greatest hospitals and clinics in the world, together with the new instruments and apparatus I purchased in Europe, regardless of price, cost me nearly two thousand dollars. I now respectfully ask that the general practitioners of Texas who have not the time and instruments to successfully treat such cases, kindly consider my recent advantages and complete armamentarium, and intrust to me the responsibility of treating such cases. If this courtesy is extended to me, I will be true to the trust confided. Besides, I will make it especially advantageous to every physician who kindly refers cases to me for treatment; try and see if I do not; a hint to the wise is sufficient. Furthermore, I will take pleasure in treating any member of a physician's family, absolutely free. I will also treat any charity case free referred to me by a physician. My present large paying practice

enables me to do this without loss to myself; besides, the pleasure of curing those unable to pay is sufficient renumeration to me. I have opened an elegant new office in the North Texas Bank building; rooms 316, 317, and 318. Call and see me while in the city.

"Fraternally submitted."

A letter of this kind is in our opinion a legitimate result of the approval given by the American Medical Association to the plan of sending out cards with the words "practice limited to" eye diseases, gynecology, etc. Instead of distributing cards to the profession, the specialist puts it in a medical journal, and naturally adds to it a modest account of his unusual experience and skill. The next step would be for the general practitioner to put in an announcement of his special skill in the common run of diseases, and request the specialists and incidentally the public to send him their patients. Very soon, as the examples of these announcements increase, their language must become stronger. For example, there are in Texas a good many physicians who have had a larger experience in eye diseases even than the writer of the above quoted letter. If his conduct is approved, what will be left to them but to imitate him, or rather surpass him, in an attractive presentation of their accomplishments. The results must be disastrous to professional dignity, personal veracity, and mutual confidence.

Medical men cannot afford to enter the field of the advertising agent. The old way is often criticised, and it is not perfect. The man must become known through his works. The profession is not so dull but that it can recognize merit, and it estimates a man's abilities fairly well by his writings and by contact with him in scientific and social meetings. The recognition thus gained comes slowly, but special skill also is acquired slowly, and matters adjust themselves with a good degree of equity in the end.

We hope that the profession of Texas will not endorse the methods adopted by the enterprising young oculist of their State.

News of the Week.

County Medical Society Election.—The Medical Society of the County of New York held their eighty-ninth annual election October 22d. Dr. Egbert H. Grandin was elected *President*; Dr. Richard Van Santvoord, Dr. Wendell C. Phillips, and Dr. S. Henry Dessau were elected *Vice-Presidents*; Dr. Charles H. Avery, *Secretary*; Dr. William E. Bullard, *Assistant Secretary*; and Dr. John S. Warren, *Treasurer*. The *Censors* elected were: Drs. Seneca D. Powell, Edward D. Fisher, George T. Jackson, Charles H. Knight, and Charles L. Gibson.

Conference of Hospitals for Insane in New York.—The Eighth Joint Meeting of the Managers and Medical Superintendents of the Hospitals of the State of New York was held, under the auspices of Honorable Austin Lathrop, at the Matteawan State Hospital, at Fishkill Landing, Thursday, October 18, 1894. Delegates from the different asylums were present. After an inspection of this model institution and congratulatory remarks by the gentlemen present, Dr. H. E. Allison, the medical superintendent, read a paper on the "Care and Treatment of the Criminal Insane." Remarks were made by Judge Graham, of Utica; Professor Stephen Smith, of New York; Dr. Carlos F. Macdonald, President of Lunacy Commission; Dr. S. H. Talcott, of Middletown, N. Y.; Senator Amasa J. Parker, of Albany; C. W. Pilgrim, of Poughkeepsie; C. G. Wagner, of Binghamton; G. Alder Blumer, of Utica; and Dr. George F. Shrady, of New York.

The Monument to Villemin.—On September 30th the monument erected to the memory of Villemin, the discoverer of the infectivity of tuberculosis, was unveiled at Bruyère-en-Vosges, in the presence of a distinguished assembly. Dr. Viger, the Minister of Agriculture, who is a member of the medical profession, represented the Government, and delivered an oration.

The Late Professor Billroth.—The letters of the late Professor Billroth, of Vienna, are about to be published, with the sanction of his widow, under the editorship of Dr. Georg Fischer, surgeon to the Hanover City Hospital. Dr. Fischer asks any English correspondents who may have preserved letters of Billroth's to send them to him at 22, Warmbuchenstrasse, Hanover. Any letters forwarded in response to this request will be copied and returned without delay.

Antidote for Fungi Poisoning.—Dr. Thomas Taylor, chief of the Division of Microscopy of the Department of Agriculture, speaking of recent deaths in this city from eating poisonous fungi, says: "The mushrooms eaten in this case were undoubtedly the *Amanita verna*, which, and *Amanita muscaria*, are the most poisonous mushrooms known. There is but one antidote known for amanitine or muscarine poison, and that is sulphate of atropine. The use of atropine, as has been fully demonstrated, will quickly neutralize the effects of muscarine and amanitine on the nerve-centres of the human system, as well as those of the lower animals. The dose may be administered either by means of hypodermic injection or by the mouth in the usual way."

Anti-toxin and Diphtheria.—The Deputies of the Lower House of Hungary proposed to vote 50,000 florins to be used in treating diphtheria with Behring's serum. At the Government's request the vote was postponed pending the reports of medical inspectors sent to France and Germany. In Buda-Pesth the use of the serum has given excellent results.

The anti-toxin treatment of diphtheria is the topic of the day in Berlin. The Children's Hospital (Kaiser u. Kaiserin Friedrich-Kinder-Krankenhaus is its short and euphonious name) has published in the daily papers an appeal for subscriptions—signed, among others, by Rudolph Virchow, Skrzecska, and Siegmund—in which it is stated that of 169 diphtheria patients treated in the hospital with antitoxin, all recovered, except those that came under treatment at an advanced stage of the disease; that, in fact, the percentage of deaths had been reduced from 42 to 17, and that the results of protective inoculation performed on the sisters and brothers of the diphtheria patients had also been most satisfactory. It must be said, however, that here and there voices are heard warning against too enthusiastic hopes. It is said that a much longer period of observation must elapse before a final judgment on the treatment can be given,

and that possibly the present cases of diphtheria are none of them of the severest type, and that it remains to be seen whether antitoxin will stand the test of one of the severe epidemics—the *foudroyant* cases, that carry off their victims in a few days.—*British Medical Journal.*

Cholera Decreasing in Europe.—The latest advices received by the Marine Hospital service show that cholera is on the decrease everywhere, amounting in the case of Austro Hungary to nearly fifty per cent. The decrease in Russia is remarkable, and it is hoped that the advent of cold weather will put an end to this epidemic entirely. There are still many cases reported in Holland, Belgium, and France, but they seem mostly of a sporadic nature, and nowhere assume an epidemic form. The health of Marseilles is now so satisfactory that the medical inspection of all vessels sailing thence has been discontinued.

A New German Hospital.—The corner-stone of the new German hospital, at Stanhope Street and St. Nicholas Avenue, Williamsburg, was laid October 22d, by Mayor Schieren, in the presence of nearly one hundred societies and several thousand people. A parade of all the societies preceded the laying of the stone. Twenty-seven lots, bounded by St. Nicholas Avenue and Stockholm and Stanhope Streets, were purchased, and a few months ago ground was broken. The cost of the hospital when completed will be about $250,000.

American Academy of Railway Surgeons.—The first meeting of the American Academy of Railway Surgeons will be held in the parlors of the Grand Pacific Hotel, Chicago, November 9 and 10, 1894.

Status and Pay of Japanese Army Surgeons.—The Surgeon-General of the Imperial Army has the rank of major-general and the same amount of salary, 300 yen per month, the yen being equivalent to about 75 cents of our money. Surgeon-inspectors, whose position is analogous to that of colonel and assistant surgeon-general in the United States Army, have the rank of colonel and a salary of 193 yen per month, or 3 yen more than a colonel of cavalry receives, and 15 more than a colonel of infantry. Surgeons of the first class rank as lieutenant-colonel, and their pay, 143 yen, bears the same relation to that of a regimental lieutenant-colonel that the pay of an inspector does to that of regimental commanders. Surgeons of the second class, with the rank of major, draw 93 yen monthly. Assistant surgeons of the first class, and pharmacists of the same grade, have 52 yen, or the pay of a captain. Assistants and pharmacists of the second class rank as first lieutenants and have the pay of that grade, 32 yen. Assistants and pharmacists of the third class have the rank and pay, 26 yen, of the second lieutenant. These medical, like other officers of the army, have increased pay when assigned to special duty; those on duty in the War Department, for instance, having an increase amounting to about one third of the regular salary of their grade.

Vermont State Medical Society.—The annual meeting was held in Montpelier, October 11th and 12th. The following officers were elected: *President*, Dr. J. H. Linsley, of Burlington; *Vice-President*, Dr. F. F. Chaffee, of Stratford; *Secretary*, Dr. D. C. Hawley, of Burlington; *Executive Committee:* Drs. J. H. Linsley, D. C. Hawley, and F. R. Stoddard, (of Shelburne). *Publication Committee:* Drs. D. C. Hawley, J. B. Wheeler, and H. C. Tinkham. *License Censors:* Drs. E. S. Albee, C. M. Ferrin, and H. S. Brown. The attendance was the largest in the history of the Society. Dr. Frederick C. Shattuck, of Boston, read a valuable paper on "The Modern Treatment of Typhoid Fever," and Dr. John C. Irish, of Lowell, Mass., presented one on the "Surgical Treatment of Uterine Neoplasms." The annual banquet was spread at the Pavilion Hotel at 10 P.M. Thursday, and was enjoyed by about a hundred and fifty, including the members of the Society, the Governor of the State, V. A. Woodbury, of Burlington, also the Speaker of the House of Representatives and other officers of the Legislature. The Anniversary Chairman was Dr. A. P. Grinnell, of Burlington. The next annual meeting will be held in Burlington.

New Ruling by the Illinois State Board of Health.—The Illinois State Board of Health will not recognize Dental, Pharmacy, or Veterinary Colleges as entitled to recognition for any part of a medical college course.

Some Recollections of Holmes.—Mr. Ernest Hart gives entertainingly some recollections of a visit which he paid to the late Dr. Holmes a year ago. "We fell," says Mr. Hart, "to talking of his visit to London in 1886, and of our meetings together and our mutual friends. He recalled a brilliant dinner party at the Reform Club on the night of his arrival, and spoke sympathetically of his host, Sir Morell Mackenzie, and some others of the party who were now no more, and of his daughter who had charge of him, whom also he had lost. Laughingly he reminded me of the 'lesson in English' he had received in the hall. During dinner the talk had turned on provincial and American slang. Speaking of one of his latest poems, of which he recited a passage, he had said in banter that he did not think it his worst, adding: 'I tried it on a dog, and the dog didn't die.' He confessed that the 'American language,' about which there was some discussion, was not always identical with the English, but 'it was none the worse for that.' At any rate, he prided himself on talking pure English. As we came away and were taking leave, he said to me, *apropos* of an engagement for the next day when he was coming to lunch with me: 'But you must give me your ticket.' In handing it to him I could not help saying: 'We English call it a card.' He answered: 'I don't know that it is a better word.' 'I did not quite relish then,' he said to me, 'being taught English by a cockney on the first day of my arrival, and I have not forgotten it; but you see I bear no malice.' Speaking of his student life in Paris Dr. Holmes said: 'It was in the days of Louis Philippe, in 1833–35, that I followed the classes of Louis, who was the loadstone of all the young American students, and there I first met Gairdner, of Glasgow, with whom I still sometimes correspond.' 'Bigelow,' he said, 'used to go over once a week to London to hear a lecture, but that was uniquely enterprising.' He claimed for Bigelow, afterward a medical professor in Boston, that he was one of the greatest of modern physicians, and that 'a single lecture which he had published on "Self limited Disease" made "a revolution in medicine." It anticipated Gull's doctrine of "Expectant Medicine," and laid bare the secret of the temporary success but the self-evident folly and

failure of homœopathy.' When a practioner boasted to him that he had 'cured a disease,' he would say: 'Young man, take care; are you sure that you cured? If so, perhaps to morrow you may kill, but then you will only say that the patient died.'"

Dr. Holmes on Walshe, Watson, and Paget.—Dr. Oliver Wendell Holmes thought Dr. Walshe, of University College, an early contemporary, "the most philosophic of the physicians of our day;" Watson, "the most eloquent;" but Paget, "the most persuasive. Persuasive, but not always convincing. He is truly the Gladstone of Medicine, and left often in my mind a doubt whether his reservations and distinctions might not to-morrow lead him to a variation from the conviction to which almost he persuaded you to-day. . . . But that is the infirmity, perhaps, of my dim perception rather than of his circumspect intellect."

A Cyclone Struck the Insane Asylum at Little Rock, Ark., on October 2d, demolishing three stories of a wing containing two hundred and sixty patients. Dr. Ingate, one of the medical staff, and formerly of Mobile, Ala., was killed. Two of the patients were killed also.

Castration for Masturbation.—Dr. Pilcher, Superintendent of the Institution for Imbeciles and Weak-minded Children, at Winfield, Kan., has been bitterly denounced by newspapers in Winfield and Topeka for castrating several boys—inmates—who were confirmed masturbators. His predecessor, Dr. Wile, had treated these boys five years without benefit, and Dr. Pilcher, taking a rational view of the subject, performed the operation for the same reason he would perform any other surgical operation—for its curative effect. There is a strong probability that he will be ndicted for mayhem, to the everlasting disgrace of the civilization of the nineteenth century.—*Texas Medical Journal.*

A Pathetic Appeal.—October is the month of cotton, calves, colds, and collections. We are not interested in any of these "forces" (four c's) except the latter, and we do earnestly hope and expect that our good friends will not forget our patience and long suffering (nor their patients and their long suffering) when they go out in quest of cash.—*The Texas Medical Journal.*

Anti-Handshaking Society.—We hear that a society for the suppression of hand-shaking has been established at Baku, in Russia.

The Golf "Cure" for Insomnia.—A writer in the *Scotsman*, commenting upon the Marquis of Salisbury's recent address to the members of the British Association at Oxford, expressed regret that his lordship should be a victim to the modern and very prevalent disorder of insomnia. He went on to appeal to the medical profession for some prompt and effective remedy for that distressing ill. "Would that the noble leader of the Conservative party would take a three months' course of golf" was the inward exclamation of one who had himself suffered from insomnia, and was at the time rejoicing in a succession of nights of profound and refreshing sleep. Golf is the game for the exhausted brainworker at any stage of his life. No junior is too young, no senior is too old to learn it; to learn it and to enjoy it. The proof of the pudding is in the eating. On the golf links of St. Andrews the man of seventy looks fifty, and the man of fifty has the appearance of thirty-five. Sleeplessness, so far as the writer was able to discover, in a three weeks' sojourn at St. Andrews, is absolutely unknown to the regular golf-player. One may almost say it is impossible. Living, as he does, in the open air, and taking several hours of daily exercise without unpleasant fatigue, and with a mind constantly, but not laboriously, interested, he eats well and so the brain is adequately nourished. The only trouble with the remedy is that a man must be a person of leisure in order to take it.

A Bureau of Autopsy.—In the year 1881 there was founded at Milan a unique and curious institution, which has been at work ever since. This was the Loria Bureau of Autopsy. It was founded, and placed under the direction of Professor A. Verga, for the use of the inhabitants of Milan. That is to say, either courts of law or the family of a deceased person can have a complete examination and report in cases where a death has occurred under suspicious or strange circumstances. All autopsies are recorded, and may be consulted for purposes of study. The Bureau is intended to serve two purposes—the advancement of knowledge, and to remove one objection to cremation raised on the grounds that crime may be less easy of detection when the deceased is effectually placed beyond the reach of examination.

The River Seine "Catch" of 1893.—The following figures are published as a result of the attempt to keep the River Seine clear of cadavera for the year of 1893. There were withdrawn from the river 5,652 dogs, 3,307 cats, 9,108 rats, 1,720 fowls and 3,942 other birds, 4,209 rabbits, 789 pigs, 7 calves, 4 hedgehogs, 33 horses, 15 sheep, 2 colts, and 13 monkeys.

Death of Dr. Virginius A. Turpin.—Dr. Virginius A. Turpin died at his residence in New York, October 11th, at the age of seventy-five years. He was a Virginian by birth. For many years he was regarded as a high authority on the subject of cholera, and during the epidemic of the disease in the year 1866, he was called by the Board of Health of St. Louis to assume the direction of the cholera hospitals of that city. A considerable portion of his life was passed in Chicago, where he enjoyed a high reputation and had an extensive practice. About two years ago he removed to New York, and since that time his health has been gradually failing.

An Appeal to the Pity and Better Natures of the Editors and Publishers of the British Medical Journal and the Lancet.—You know, gentlemen, that the paper upon which is printed the "foreign edition" of your otherwise splendid journals, is simply inexpressibly vile. It is at once thicker, and yet more mushy and rotten than tissue-paper, and is, therefore, properly fit for no purpose whatsoever—absolutely none—of civilized or unregenerate man. We can only explain its use on the ground of a contempt of us, the reason of which dates back to Revolutionary times, or perhaps to Simian ages. You certainly would not, and could not, treat residents of the British Islands thus. We beg of you to remember that however remote the relationship we are at least your Teutonic brethren, and that it is your duty to help on the cause of Anglo-Saxon civilization. Please do not forget that even an American can sometimes grumble, and even revolt, after prolonged indignity and injustice.—*Medical News.*

UNVEILING OF THE SIMS STATUE.

The ceremonies attending the unveiling of the statue of Dr. J. Marion Sims and its presentation to the city of New York were held in Bryant Park on Saturday last, October 20th, at 3 P.M.

A number of representative medical men, with female members of their families, occupied places upon the elevated platform, which was decorated with flags and which faced the statue, also draped in the American flag. The fine October weather enabled the large audience in the Park to comfortably compose itself upon benches provided for the purpose.

On the stand were: Dr. H. Marion Sims and Master Marion Sims Wyeth, the little grandson of the original of the statue. Others present were Dr. D. B. St. John Roosa, President of the Academy of Medicine; Dr. Abraham Jacobi, Dr. Lewis A. Sayre, Dr. E. L. Keyes, Dr. J. A. Wyeth, Civil Justice Stiner, Mr. and Mrs. Edwin Gould, Dr. A. R. Robinson, Dr. and Mrs. William M. Polk, Drs. Robert W. Taylor, O. D. Pomeroy, Y. R. Goffe, W. G. Wylie, Mrs. G. F. Shrady; Drs. O. D. Pomeroy, D. H. Goodwillie, Robert C. Myles, S. Waterman, A. G. Gerster; Dr. and Mrs. T. R. Price, and Dr. W. H. Pancoast, of Philadelphia; Mrs. P. F. Mundé and Miss Bertha Mundé, Medical Director E. S. Bogert, U. S. N., and Hon. A. B. Tappan, who, as a member of the Board of Park Commissioners, accepted the statue for the city. Among the spectators in the Park there were also delegations from the New York Academy of Medicine, the New York Pathological Society, the American Gynecological Association, the Medical Society of the County of New York, the New York Polyclinic, and the New York Post-Graduate Medical School and Hospital.

The Jefferson Medical College of Philadelphia, from which Dr. Sims was graduated in 1835, sent Dr. W. W. Keen and Dr. Theophilus Parvin to represent the Faculty.

Letters of sympathy with regrets of inability to be present at the ceremonies were received from Professor J. M. Da Costa and Dr. Richard J. Dunglison, of Philadelphia; Dr. George J. Englemann, of St. Louis; Professor A. P. Grinnell, of University of Vermont, Burlington, Vt.; Dr. J. C. Reeve, of Dayton, O.; Dr. B. Bernard Browne, of Baltimore; Dr. M. C. Baldridge, of Huntsville, Ala.; Dr. R. Stansbury Sutton, of Allegheny, Pa.; Dr. A. Webb, of Collierville, Tenn.; and Dr. Henry Dickson Burns, of New Orleans, La.

There were not only a goodly number of ladies occupying seats on the platform and in the general audience, but many were seated in carriages which lined the adjoining streets.

The committee in charge of the ceremonies consisted of Dr. George F. Shrady, Dr. William T. Lusk, Dr. William M. Polk, Dr. Thomas Addis Emmet, and Mr. William H. S. Wood.

General Addresses.—Dr. George F. Shrady made the opening address, in which he sketched the character of Dr. Sims as a surgeon and philanthropist (see p. 513).

Professor Paul F. Mundé, M.D., followed with an address on Dr. Sims as the gynecologist, the founder of the New American School (see p. 514).

Presentation of Statue to the City of New York.—On the conclusion of Professor Mundé's address Dr. Shrady, as chairman of the committee, made the following presentation:

"Commissioner Tappan: I have the great honor, on behalf of the many friends and admirers of Dr. J. Marion Sims, and in the name of the medical profession of this and other countries, to present this beautiful statue to the city of New York, with the assurance that it will compare favorably with others of its kind in our parks and squares, and in the hope that in this Park, which is hereafter to be devoted to the meritorious recognition of distinguished services in literature, art, and science, it may take its worthy place."

During these remarks the string was pulled by Master Marion Sims Wyeth, the five-year-old son of Dr. J. A. Wyeth, and the covering fell from the figure, amid the cheering applause of the multitude assembled.

The Acceptance for the City by Hon. A. B. Tappan.—Park Commissioner Tappan, on behalf of the city, made the following speech of acceptance:

"'Whether on scaffold high or in the battle's van,
The noblest place for man to die is where he dies for man!'

"These words of the poet apply, with slight change, to Dr. Marion Sims. His life exemplified the saying that the 'noblest life a man can live is where he lives for man.' A citizen of high repute, a benefactor of the human race, a man who reached the most exalted place in his profession, it is due to his memory that all who knew him professionally, and all who knew him by reputation, should stop by the wayside of the busy field of our daily life and shed a tear to the memory of his many virtues and his most distinguished services.

"Dr. Sims had, indeed, a most exalted career as a citizen and as a professor of the art of preservation of the human race and of the laws of life and health. No eulogy can do justice to his merits, and in erecting this heroic statue to his memory those who knew him, and by whom this work was created and is erected, are doing themselves high honor.

"The city of New York feels most proud of the citizenship of its distinguished men in every department of active life. The profession of which Dr. Sims was a most prominent member has a just pride in the deed of to-day in erecting this statue. I repeat that it is an honor, not merely to one who has filled and finished an exalted career and has gone to his reward, but to those who participate in the ceremonies of this occasion.

"Mr. Chairman, I might add much, very much, to these brief remarks, deputed as I am by the public authorities of our city to speak on this occasion; but that task has been better performed by others. The work and all that it is intended to perpetuate are now a part of the history of our metropolis, and is accepted with all the high honor accorded to contributors that so justly belongs to them. One word more and my agreeable duty is finished:

"'Count that day lost whose low, descending sun
Sees no good deed or worthy action done.'

"Gentlemen, this day has not been lost. The deed in which we are all participating will mark it in our calendar as a day well spent and always to be remembered. We thank you for your public spirit in offering a statue of high excellence in its workmanship, and claim it now as an additional ornament to the city at large, and especially to Bryant Park, the scene of these ceremonies.'

The statue is the work of Müller, of Munich. It is of bronze, in full length, and of heroic proportions. It stands upon a pedestal of brown granite. On one side is the inscription:

J. Marion Sims, M.D., LL.D.
Born in South Carolina, 1813.
Died in New York City, 1883.
Surgeon and Philanthropist.
Founder of the Woman's Hospital, State of New York.
His brilliant achievements carried the fame of
American Surgery
Throughout the civilized world.
In recognition of his services in the cause of
Science and Mankind
He received the highest honor in the city of his countrymen,
And decorations from the Governments of
France, Portugal, Spain, Belgium, and Italy.

On the opposite side the inscription recites that the statue was "Presented to the city of New York by his professional friends, loving patients, and many admirers throughout the world."

Clinical Department.

TWO COMMON FORMS OF ALOPECIA, WITH THEIR TREATMENT.

By ELLICE M. ALGER, M.D.,

NEW YORK.

CLINICAL ASSISTANT IN DERMATOLOGY NEW YORK POST GRADUATE SCHOOL.

The premature falling out of the hair is a trouble that causes a great deal of mental disquietude in young people and not infrequently leads to certain more serious ills. It is exceedingly common, and yet comparatively few cases are brought to the physician's notice, for it is generally understood that the family doctor knows little and cares less about such a trifling matter.

It should not be so, for a little study in this direction will be more profitable, both for him and his patients, than a profound research into "thyroid feeding" or leprosy.

In a certain number of cases of alopecia no sufficient cause for the hair-fall can be found, even on careful examination. These idiopathic cases begin, generally, in individuals between twenty and thirty, with a very gradual loss of hair from the vertex or sides of the forehead. At the same time a progressive decrease in the size and vigor of the hairs can be plainly seen, till after a certain length of time the vitality of the hair follicle is exhausted and complete baldness ensues. The time required for this process to be completed varies from two to ten years, and is usually much shorter in patients who lead sedentary lives.

In looking for predisposing causes it is often found that early baldness has been a family trait for one or more generations, and this influence in many cases seems to be transmitted along sexual lines; the daughters of a bald father do not on that account suffer as much as though the mother were prematurely bald. Another undoubted factor is the wearing of hot or tight-fitting headgear, since it is argued that a hat tight or heavy enough to compress blood-vessels must interfere with pilary growth and nutrition. The frequent soaking of the head which many people seem to think necessary, is undoubtedly injurious.

Just how nerve-strain should cause early loss of hair cannot be satisfactorily explained, but it is beyond question a factor in many cases.

Women are apparently much less subject to alopecia than men, probably because they wear different head-gear and are naturally provided with a more abundant layer of subcutaneous tissue. Also they pay much more attention to the condition of the scalp, and are more skilful in concealing their losses by artificial means.

The prognosis in these idiopathic cases is bad, the gravity increasing as the layer of subcutaneous fat becomes less, and as age increases. The rate of progress is best indicated by the size of the individual hairs and their clipped ends in men, and their length in women; these indicating whether they have matured and fallen naturally, or come out while immature. A constant fall of lanugo hairs would indicate an advanced and grave state of the trouble. The indications for treatment are first prophylactic. The general health has a direct bearing on the case; the scalp should be frequently brushed with a moderately stiff brush and any deficiency in the oily secretions should be artificially supplied. If the trouble seems caused by a lack of the hair-forming elements in the body, a generous diet must be insisted on and supplemented by tonics, iron, hypophosphites, etc. Locally, stimulants are called for and remedies which shall cause an unusual supply of blood in the scalp. Tr. cantharides, Tr. nucis vom., Tr. capsic., and quinine all have more or less value. They can be used in oily excipients if the scalp be very dry, or in alcohol if the sebaceous secretion is sufficient.

The following will give some idea of the local treatment:

℞. Tr. cantharides,
Tr. capsic.,
Tr. nucis vom.,
Ol. ricini.....āā ʒ ij.
Alcohol ..... ʒ ij.
Spts. rosmarini ..... ʒ j.
M. Sig.: Apply to scalp night and morning.

Another very good thing which should be carefully used is muriate of pilocarpin, either hypodermically or according to Lassar's formula as follows:

℞. Pilocarp. muriat. ..... gr. xv.
Vaseline ..... ʒss.
Lanolin ..... ʒss.
M. Sig.: Rub in carefully twice daily.

But in another and much larger class of cases an unmistakable cause appears in the presence of a larger or smaller amount of "dandruff," which gives the name alopecia furfuracea. Clinically this dandruff takes on two forms, which are probably due to the same cause. The common variety consists in the constant shedding of dry scales. European writers would have us believe that this is parasitic in origin; that the irritation of parasites results in the shedding of epithelial scales while yet imperfectly formed, and that the falling out of hairs and the succeeding atrophy of the follicles occur because they form only parts of the epithelial covering and are eventually subject to the same processes.

In another form, the so-called seborrhœal eczema of Unna, the scalp is covered with adherent crust and scales, frequently taking the form of circular patches and showing a marked tendency to spread over the face and body if undisturbed. These patches are inflammatory in character, especially on their margins, and are very greasy. This seborrhœal eczema is most common from puberty to about thirty, that being the time when the sebaceous glands are most active, and it has been demonstrated by the experiments of Lassar and Bishop that the cause is a parasite, but whether the crusts are the result of sebaceous or sudoriferous hypertrophy is still a matter of dispute.

At any rate, owing to parasitic irritation, one of two things takes place. Either the cells formed in the glands and hair follicles are shed while yet imperfect, taking the hair with them, or from the constant production of sebum a hypertrophy of the glands results, followed by atrophy of the hair from pressure.

In this variety of alopecia the prognosis is better than in the idiopathic form, but the treatment is quite different. To begin with a stimulating treatment would aggravate instead of alleviate the difficulty, and this is the mistake commonly made. The first thing to do is to remove the crusts, and this is first accomplished by soaking the scalp thoroughly with some bland oil at nighttime, and cleaning it thoroughly in the morning. A nice way of accomplishing this is to shampoo the head with a mixture made of egg-yolks beaten up in limewater, washing the scalp thoroughly afterward. When the crusts are pretty well gone we can apply anti-parasitic treatment. This requires patience, and application must be made long after the trouble is apparently gone. The remedies at command are numerous. Perhaps the most universally serviceable is sulphur in one form or another, for it is a parasiticide and a good stimulant to the hair growth, supplying elements which contribute directly to its growth. It can best be used in ointment form. One of the nicest preparations is that devised by Dr. Jackson, called sulphur cream. The formula is:

℞. Cera alb. ..... ʒ viij.
Ol. petrolat. ..... ʒiv.
Aq. rosæ ..... ʒijss.
Sod. biborat. ..... gr. xxxvj.
Sulphur ..... ʒ vij.
M. Sig.: Apply night and morning.

Resorcin is another valuable remedy. It can be used in ointment in strengths of from five to ten per cent., but a more agreeable preparation is the following:

℞. Hydrarg. bichlor ..... gr. j.
Resorcin..... ʒij.
Alcohol,
Aq.....āā ʒjss.
M. Sig.: Apply night and morning.

Ichthyol and naphthol, thymol and many other remedies have their advocates and values. The treatment must be persisted in as long as any traces of seborrhœa remain, the frequency of applications being gradually diminished. Afterward the hair thickens up, its growth being assisted, if necessary, by the stimulating remedies advised under alopecia idiopathica.

325 East Nineteenth Street.

SEWER-GAS A CAUSE OF PNEUMONIA.

By THEODORE ZANGGER, M.D.,

late assistant physician, university hospital, zurich, switzerland.

In his interesting paper on "Sewer-gas a Cause of Throat Disease," in the Medical Record of September 1, 1894, Dr. Robinson has written on a subject of no small import. Perhaps the following two cases, which I had under my care at a health-resort in the Bernese Oberland, may help to throw some further light on the subject.

Case I.—Miss O. T——, aged fifteen, of healthy parents, pale, anæmic, who had undergone an operation for adenoids six weeks before, sickened with acute pharyngitis and tonsillitis without any formation of membrane. Fever remittent, normal or rather subnormal in the morning, and rising to 102° F. and 102.5° F. in the evening; no lung symptoms except slight bronchial catarrh. After three days the patient developed a circumscribed pneumonia of the lower lobe of the left lung. Recovery in three weeks. The drainage of the châlet was in a very bad state, nauseous odors spreading all over the house; the drains were immediately seen to, and no other member of the household (five adults, four children) showed any illness.

Case II.—Miss Z——, fifteen years of age, weak and anæmic, still suffering from albuminuria subsequent to scarlatina, four months previous. Three weeks later than Case No. 1, she was attacked with acute tonsillitis and subsequent pneumonia of a portion of the lower lobe of the right lung. Temperature remittent, the fever never exceeded 102° F.; great prostration. Recovery took place in a fortnight. No other cases among the one hundred and twenty guests of the hotel. Drainage very defective, nauseous odors rising at night up to the windows of the patient's bedroom.

At the same time, but at another hotel, there was one case of severe erythematous tonsillitis, and one of follicular tonsillitis simulating diphtheria in all its symptoms. Both recovered in from three to five days. There were no other infectious diseases at the time among the three hundred visitors and the sixteen hundred inhabitants of the village.

These cases, occurring at an Alpine resort four thousand six hundred feet above the level of the sea, among patients of the better classes who were accustomed to pay every attention to hygiene of the body, point to the possibility, or rather, I would say, the probability, of sewer-gas as causation. The form of pneumonia, localized as it was and limited to a small portion of the lobe of one lung, the remittent type of the fever, and perhaps the undue amount of prostration in both cases, are striking. I can explain this only by considering the "causa agens" to be the same in both cases: micro-organisms contained in and disseminated by the sewer-air and affecting just these patients as being in a low state of general health. The similarity of the cases may even point to the similarity of species and similarity of virulence of these bacteria, just as we see patients suffering from typhoid fever or diphtheria due to the same source of infection, offer curious analogies as to the severity and the complications of the disease.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, October 8, 1894.

B. Farquhar Curtis, M.D., Chairman.

Election of Chairman.—The resignation as Chairman of Dr. Charles A. Powers, he having removed to Denver, was accepted with regret, and Dr. B. Farquhar Curtis was elected to fill the vacancy.

Hernia Treated by the Wire Mattress Method.—Dr. A. M. Phelps presented a young man to illustrate the treatment of hernia by the method which he had described some months ago, one of the chief features of which consisted in weaving silver wire in the form of a mattress into the layers of muscle when closing the wound, with a view to offering a stronger barrier against recurrence. While there had been no recurrence in the several patients treated in this manner, yet it was too early to speak of a permanent cure, and he showed this patient simply to prove that the presence of the wire in the tissues caused no inconvenience after having been worn seven months. In one or two cases there had been a little superficial suppuration, but not of consequence; the cases which he had treated had been severe ones, the opening large.

Hernia Afflicted.—The Chairman, Dr. Curtis, presented a man who had had double inguinal hernia, the McBurney operation having been done on one side, the Czerny on the other. Both had given way, the McBurney first, after which it had been followed by Macewen's operation, which still held. Four weeks ago Dr. Curtis performed Basini's operation on the other side.

Bending of Neck of the Femur.—The Chairman presented another patient, a young man, who had been admitted to St. Luke's with the diagnosis of tubercular arthritis at the hip of fifteen months' duration; but when Dr. Curtis came to operate he found, on reaching the neck of the femur, that it was healthy in appearance, but bent, bringing the head down on a level with the trochanter. The neck appeared also to be somewhat shortened. He at once closed the wound, and it healed by primary intention. The case belonged among a class of which Hoffmeister had collected about forty, of softening of the neck of the femur, resulting in bending and consequent shortening of the limb, and more or less mechanical limitation of motion and pain on use. The trochanter projected more than on the sound side.

Dr. Royal Whitman presented two patients, a young man and a boy, with the same trouble. In the first there was bending of the neck of the femur in both limbs, producing the deformity known as scissors legs, the two limbs crossing each other at the knee. In this case the diagnosis of softening of the neck was made before there was scarcely any deformity, but his advice was not taken, the patient continued at his work, saw various physicians who made the usual diagnosis of hip-joint disease, and finally of paralysis, because of his awkwardness. Dr. Whitman intended soon to divide the femora and overcome the crossed position of the legs. Flexion and extension were almost free, but power of abduction was very limited; rotation was also limited. In the second case there was bending of the neck of the femur only on one side, and the symptoms were like those in other forms of knock-knee. There was only limitation of abduction in this case, and the shortening amounted to half an inch. No case yet reported had occurred after the twentieth year.

Fracture of Ulna and Radius.—Dr. Jacob Teschner presented a boy who had fractured the ulna and radius from a fall in July, and when seen soon afterward was found to have the end of the lower fragment of the radius in contact with the end of the upper fragment of

the ulna. Four short splints, one on each of the four aspects of the forearm, were applied, and over these a longer splint with a webbing, extending two inches beyond the fingers, to give sufficient extension to prevent the fractured ends from slipping past one another. The result had been perfect.

Enormous Sarcoma of Ilium Treated Successfully by Inoculations.—Dr. W. B. Coley presented the young man whom he had first shown to the section last spring, through the kindness of Drs. George F. Shrady and F. Kammerer, when there was an enormous sarcoma of the ilium on the right side. The patient's health was declining rapidly, an operation was entirely impractical, and under these circumstances he had, with the consent of the gentlemen named, undertaken treatment by injections of the combined virus of erysipelas and the bacterium prodigiosus. The injections were kept up over a month, during a part of which time, and for some weeks after cessation of treatment, the tumor sloughed and discharged in great masses. While the sloughing was going on, the patient's condition became critical, but afterward he regained flesh and strength. At present there was only a slight discharge from one of the sinuses, around which there was moderate inflammatory thickening. The ilium had resumed nearly its normal size. In a paper which he had read at Washington last spring, he had reported five other cases which could be pronounced cured by this method, the total number so treated by him having been twenty-five at that time. Since then he had had two other cases. The percentage of successes had been about one in five.

Dr. George F. Shrady remarked that he had watched this case and the treatment with great interest from the time it first entered his wards, and had been perfectly astonished at the result. It was clearly an inoperable case, as an operation would have involved resection of the ilium and division of the man into two parts. He had very little faith that anything could be done by way of toxin treatment, but knowing that this was an age of progress he asked Dr. Coley to kindly come into the wards and try that method. The result seemed to be that the patient was cured. He could not recognize any of the original growth, and there was reason to hope there would be no recurrence. He believed now that there was a great future for this toxin, and should never be discouraged in inoperable cases until it had been tried. It gave one reason to hope that something might yet be found equally efficient in cancer.

The Chairman referred to a case in St. Luke's Hospital, of very large secondary sarcoma of the clavicle, the growth of which had ceased after using the injections two weeks, but the treatment had to be discontinued on account of deposits in the lungs, and hæmoptysis. The effect of the injections had also been shown in the regular rise of the temperature every day or two, just as had occurred in Dr. Coley's case.

Resection of Knee for Charcot's Disease.—The Secretary showed, in behalf of Dr. Willy Meyer, a man with locomotor ataxia with so-called Charcot's disease of the left knee, which had been resected by Dr. Willy Meyer in 1887. Although the spinal disease had progressed, there had been no further trouble with the affected knee. Bony union had not taken place. There was slight motion, nature having formed a sort of condyle and socket.

Dr. Syms was not convinced that this patient was better off than he would have been without an operation. At the same time that Dr. Meyer was about to operate, he had himself a patient on whom he wished to excise the knee for Charcot's disease, but the patient refused, and afterward partial bony anchylosis formed and left a better joint than probably would have resulted from any effort to bring about artificial anchylosis.

Improved Osteoclast.—Dr. W. M. Phelps presented a Grattin osteoclast which he had modified in a way to obviate breaking of the skin and producing compound fracture. The new instrument was also stronger and easier to operate.

Multiple Neuro-fibromata. Dr. C. N. Dowd read a brief paper in which he described two cases of this affection. The first was in a man aged thirty-three, who during the past two years had had probably as many as two hundred tumors on the surface of the body, most of them freely movable on the underlying tissue but attached to the skin, the surface having a red angiomatous appearance. On removing one it was found to be a fibroma of the variety known as neuro-fibroma. Such tumors were ordinarily benign, and caused trouble only by their mechanical irritation and disfiguration.

The second case was in a man aged thirty-five, who first noticed a tumor over the olecranon of one arm, and afterward others over various parts of the body, varying in size from a pea to a horse chestnut. They had the appearance of the tumors in the other case, except that in some there was a tendency to necrosis. There was no history of syphilis, yet mercurial inunctions caused the tumors to disappear, proving their syphilitic origin. Replying to a question, he said there was no neurotic history.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, September 26, 1894.

George C. Freeborn, M.D., President, in the Chair.

Report of the Microscopical Committee.—Dr. E. K. Dunham, on behalf of the Microscopical Committee, reported the results of the examination of the specimen presented to the Society on February 20, 1894—supposed gumma of the heart. Because of the presence of certain bodies closely resembling giant cells, this specimen had been referred to the Committee. The special object was to make a differential diagnosis between a possible tubercular or syphilitic causation of the growth. At that meeting the opinion was advanced by one of the members of the Society, that the bodies resembling giant-cells were derived from the muscular fibres of the heart. Further microscopical examinations had confirmed that view, as it had been found possible to select a series of transitional forms explaining the changes. In order to distinguish between tuberculosis and syphilis, a large number of sections were examined for tubercle bacilli, but none were found. The sections also failed to show any reason for regarding the growth as of tubercular origin. In support of the opinion that the growth was of syphilitic origin, were certain appearances in the blood-vessels which seemed to indicate a beginning thickening of the vascular wall. The results of the microscopical examinations were therefore confirmatory of the original diagnosis.

Giant-Cells in Epitheliomata.—Dr. George P. Biggs referred to a specimen of epithelioma, which he had presented to the Society last November, in which there were giant cells. The tumor had been removed from a man sixty years of age, who had given a history of having received a compound fracture of the inferior maxilla five years before. Following this, a tumor developed in the floor of the mouth, which proved to be an epithelioma. A small nodule was said to have recurred in the scar left after the operation for the removal of the growth. Later, a growth appeared in the submaxillary region on the same side, and this had grown steadily for four months previous to his coming under observation. The specimen referred to, which was a typical epithelioma, contained large numbers of giant-cells of peculiar character, some of them very large, and containing a great many nuclei grouped near the centre rather than at the periphery. The specimen had been submitted to the Microscopical Committee, and Dr. Dunham, after examining a number of sections stained in various ways, was able to demonstrate that these giant-cells had been formed from epithelial cells.

He desired at the present meeting to present a similar specimen, which had been removed at the New

York Hospital by Dr. Stimson, from a man fifty years of age who gave a history of progressive loss of voice, and of some pain on swallowing, for four years. For five or six months previous to the operation, he had suffered from dyspnœa, which had become so severe that an operation was undertaken. The family history was tubercular, but there was no personal history or symptoms of tuberculosis. The operation consisted in opening the larynx and removing from its interior a large part of the mucous membrane and a new-growth. Examination of the latter showed it to be a typical epithelioma. In this specimen also were giant-cells apparently of the same nature as those found in the first specimen referred to. Some of these cells were large, others had only three or four nuclei, sometimes grouped in the epithelial structure and sometimes by themselves. Some of them were round, while others were irregular in shape. Tubercle bacilli were searched for, but not found. Since then, in two other cases he had seen similar cells, but not as distinct as in the microscopical specimen just presented. They seemed more prone to form in epitheliomata of slow growth. The literature of this subject was very meagre.

Dr. Thomas H. Manley asked the clinical significance of these cells—in other words, whether their presence was to be considered an element in the prognosis. We know that, as a rule, cancerous growths, particularly on the tongue, were rapidly fatal, and that sarcomata in this region often did not recur for a considerable time after their removal. He recalled one or two illustrative cases which had occurred in his own practice.

Dr. Biggs replied that he had not seen a sufficient number of cases to admit of his stating definitely in regard to their possible clinical significance,-but in those cases he had reported the growth had been quite slow.

The Society then adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, October 15, 1894.

Samuel B. W. McLeod, M.D., President, in the Chair.

1, Posture in Anæsthetic Accidents; 2, The Use of Sedatives in Heart Disease; 3, The Efficacy of Ichthyol on Inflamed Tissues.—Dr. Hobart A. Hare, of Philadelphia, read a paper containing brief remarks upon these three subjects. Under the title Posture in Anæsthetic Accidents, he spoke of the position of the head, neck, and tongue, and their influence on opening or closing the glottis. Artificial respiration was often rendered nugatory by placing the head or tongue in a position which closed the glottis and obstructed entrance of air to the lungs. If the tongue were pulled out and over the lower incisors by the tip it would not raise the epiglottis; it must be pulled outward and upward toward the upper incisors. Regarding control of the glottis by Howard's method of extension of the head and depression of the neck, Dr. Hare showed by experiment on the cadaver, and could give clinical evidence, that the neck must not be depressed, but lifted, else the velum and tongue would obstruct the passage of air through the mouth, which would prove very serious if the nostrils should also happen to be obstructed. Regarding the comparative efficacy of Sylvester's and Marshall Hall's methods of artificial respiration, he had made some experiments which proved that Sylvester's was much more efficacious in inflating the lungs. It was important that the feet should be held while the movements were being made with the arms—that the body should be stretched.

Cause of Death in Chloroform Anæsthesia. — Dr. Hare referred to his studies in connection with the Hyderabad Commission, and said he was convinced that the chief factor in causing death in chloroform anæsthesia was cessation of respiration through paralysis of the respiratory centre in the medulla, although he knew also of the influence exerted on the vaso-motor system, and through it upon the heart, and did not doubt that the heart might first give out in certain cases where this organ was diseased, just as death might take place from cardiac shock brought on by various causes provided the heart was already unsound. The death from chloroform in such a case was due more to sudden vascular distention than to direct influence on the heart. He had found that atropine allowed more chloroform to be used without depression.

Cause of Death in Traumatic Shock.—The author had observed in many cases of death supposed to be due to circulatory failure in traumatic shock that respiration was first to give out. He had, therefore, made use of Sylvester's method of artificial respiration in similar cases, and had seen the breathing and pulse improve from the increased quantity of air made to enter the chest.

Sedatives in Heart Disease.—The next part of the paper dealt with the treatment of heart disease. Digitalis had been much abused. It was very useful in certain cases, but was contra-indicated in others, while agents of an opposite nature, sedatives, not stimulants, were called for. These agents were aconite, atropine, gelsemium. In practice he found that he prescribed the sedatives oftenest. Digitalis was beneficial in those cases where the heart was failing and unable to do its work. The sedative agents did best where the heart was beating with sufficient force or too much force, but spasmodically, irregularly, and ineffectually. In cases of compensatory hypertrophy among laborers or gymnasts the heart was likely to cause trouble when they ceased their usual degree of exertion. Digitalis, under such circumstances, would increase the palpitation and cardiac symptoms, while aconite would act as a sedative and give relief. Next to aconite in value as a cardiac sedative came gelsemium, then veratrum viride. The form of cardiac palpitation and oppression complained of by medical students on climbing stairs at the commencement of a term was usually best relieved by one of these agents.

The Efficacy of Ichthyol on Inflamed Tissues.—Dr. Hare concluded his paper by citing some experiments made on rabbits at his suggestion in the laboratory, with a view to explain the influence of ichthyol over inflammatory action. Under certain precautions the skin of the rabbits was bruised in a way to produce subcutaneous injection and inflammation. The rabbits were divided into nine series: in one the affected area not receiving treatment; in another it was simply rubbed; in a third, ichthyol was applied; in a fourth, the ichthyol was applied with rubbing; in a fifth, it was applied along with lanolin; in a sixth, the latter was applied alone, and so on, the object being to determine whether the benefit was due to the rubbing, the ichthyol, the lanolin, or to any combination in the use of these agents. Sections of the skin were examined microscopically. The conclusions drawn from the experiments were, that the inflammatory exudate disappeared more quickly under rubbing than without; that it disappeared most quickly with the combined use of rubbing and ichthyol, and that lanolin had no effect. The rubbing made the oil-globules penetrate more deeply.

Dr. E. K. Dunham was requested to open the discussion. He showed some cultures of micro-organism which he had made with a view to determining whether ichthyol had any antiseptic value. Its action on the growth of disease germs was found to be only slightly inhibitory.

Prolonged Lincoln's Life.—Dr. C. A. Leale said that in drowning and anæsthetic accidents, he put the finger far back in the mouth and drew the tongue forward, thus accomplishing what Professor Hare did by pulling the end of the tongue forward and upward. He had been much indebted to Dr. Flint for knowledge

acquired in his laboratory regarding artificial respiration as it had led him, when he found President Lincoln sitting in a chair after the shooting, the head dropped forward, breathing stopped, pulse absent at the wrist, to immediately lay him on his back upon the floor and to lift the chin and thereby restore respiration. The coaguli were then removed from the skull, relieving cerebral pressure, whereupon he had the happiness to see restoration of lung and heart action. Miss Keen, the actress, came in while in stage costume, and seeing the President lying upon the floor, sympathetically begged permission to hold his head. Dr. Leale replied, "No, the head must not be raised an inch, or else it may interfere with respiration and cause death."

Dr. Leale also referred to a case of suicidal attempt with two ounces of chloroform, which he had reported in 1873, and in which he practised artificial respiration and irritated the great sympathetic ganglia by introducing his hand a distance of sixteen inches up the colon.

Much of the further discussion was directed to the comparative safety of ether and chloroform as anæsthetics.

Dr. Manley felt that ordinarily to give chloroform instead of ether was to needlessly imperil the patient's life. He inquired the author's opinion of the new French method of rhythmical traction on the tongue where breathing had ceased; also of Dr. Fell's method of artificial respiration.

Dr. Rupp said Dr. A. C. Post had years ago taught and practised pulling the jaw and tongue forward, the finger being applied to the back of the tongue.

Dr. J. Mount Bleyer said with reference to the method of artificial respiration credited to Dr. Fell, that he had himself first described it, in a paper read in 1886, one tube being used for the introduction of air into the lungs, the other for its escape. Further remarks were made by Drs. Collyer, McKeeby, Brothers, and others. Chloroform had its advocates.

Dr. Hare in some concluding remarks said that a person's susceptibility to chloroform or ether, like to some other drugs, seemed to depend to some extent upon the climate. In the South and in Europe chloroform appeared to be less dangerous than in this section of the United States. Here, judging by immediate results, ether was much safer, but it was a question whether as much could be said of it if the after-accidents as nephritis, bronchitis, etc., attributable to its use, were taken into consideration. The observations of those who had discussed the question this evening were in harmony with those of all others who had made it a point of special investigation that in chloroform accidents the respiration ceased before the heart-beat, although a contrary view had generally been held at first.

Chart Illustrating Mortality Tables Used by Life Assurance Companies.—Dr. N. S. Westcott explained such a chart. On it vertical lines were drawn to the number of 100, every fifth one heavier than the others; they were crossed by horizontal lines up to any required number. The horizontal lines beginning at the bottom of the left were numbered from 1 up, which stood for thousands, the number living; the perpendicular lines beginning at the left and bottom were numbered from 1 to 100, the age; at the top the same lines contained the number still living for the respective years, the number decreasing from left to right until zero was reached at the age of one hundred. A red line was drawn from the left upper corner of the chart, sloping gradually to the right lower corner, dropping as it proceeded to each horizontal line representing the number of living at any given year. There was a rapid fall in this oblique line the first five years, another increased declination after the fiftieth year, and a third, corresponding in degree to the first, beginning at old age. By this chart one could quickly estimate the probability of life at given ages. Without the age being given, mortality rate per thousand in any community was of little value.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE WINTER SESSION—THE MEDICAL SOCIETIES—EPIDEMICS — DIPHTHERIA — ANTITOXIN — EPIDEMIC SKIN DISEASE—EPIDEMIC MUSCULAR RHEUMATISM—BERI-BERI—THE CHELSEA HOSPITAL SCANDAL—HONORARY MEDICAL OFFICERS TO PAY WARDS.

London, October 6, 1894.

We are already settling down to the work of the winter session. The schools having opened on the traditional October 1st, and a number of them having celebrated the occasion with a dinner, are now quietly engaged in their usual work. The societies, too, are all awakening, and next week we shall be in the full tide of their proceedings. The Obstetrical Society has already met; on Monday the Medical Society of London will begin its session with an address by the President, Sir W. Dalby; on Wednesday the Hunterian Society will be addressed by Mr. Bryant; on Thursday the Gynecological Society will meet; on Friday, the Clinical Society.

I have not yet heard when the Epidemiological Society will hold the first of its few meetings, but an early date would seem to be appropriate, for much of our attention has lately been demanded by epidemics, and we seem to be threatened with an outbreak of epidemiological conversation and literature. I do not refer in this to cholera or the more distant Eastern plague, but to diseases in our midst with a more or less epidemic character. First of these is diphtheria, which has for some years been present in London, but seems to have rather increased. Last week there were sixty-seven deaths, and the numbers admitted to the hospitals of the Asylums Board show that the disease has been more prevalent in the last quarter than in previous Michaelmas quarters. The same may be said of the numbers of notifications. A most interesting point in reference to diphtheria is the success that has attended the treatment by antitoxin. Stimulated by the success reported from the Continent, quite a number of practitioners have been using the new treatment, and successful cases are being rapidly accumulated. Like all other remedies, it must be employed in the early stage if it is to be effectual, and there is some evidence that it is even preventive. The Pasteur Institute prepares the remedy on a large scale, but not enough for French demand. It is not easy to obtain a supply here, but soon perhaps may be. It is to be hoped that no spurious or imperfect preparations will come into the market. A considerable time is required for preparing the remedy, and no little skill. Now is the time for the British Institute of Preventive Medicine to show its capacity and establish its position. Some are calling out for the State to provide a supply. That is not likely to be done in a hurry, and the British Institute ought to be able to meet the demand.

The second epidemic that forces itself on our notice is exfoliative dermatitis. Your readers will remember my report on this three years ago, when Dr. Savill first described it as "a contagious malady in which the main lesion is a dermatitis, sometimes attended by vesicles, always resulting in desquamation of the cuticle, usually accompanied by a certain amount of constitutional disturbance, and running a more or less definite course of seven or eight weeks." This disease was epidemic in some of our workhouse infirmaries in 1891, and in them studied by Dr. Savill. It has since recurred each summer and autumn, but this year to a much greater extent. It chiefly affects the old and feeble, and the temperature is generally subnormal. The mortality in 1891 was 12.8 per cent.; this year, so far, it has been 11.6. A diplococcus was discovered by Dr. Savill, but he has not been able to find it in later cases. Milk and other articles of food have been suspected of conveying the contagium, but there is not much evidence on the point. . .

Another disease alleged to be epidemic in several localities, is muscular rheumatism. I am informed that some of the so-called epidemics resembled influenza, but in others this was not the case. At all events the outbreaks were not very serious. The attacks lasted some two or three days, and consisted in sudden pain in the head or chest, with a rise in pulse and temperature. Some observers mention pleurodynia and neuralgia as being similar, others notice sweating of the odor common in acute rheumatism. No one that I know of has met with cardiac complication.

Yet another epidemic is reported. In a lunatic asylum in Dublin there has been an outbreak of beri-beri. The origin of the disease has not been traced, and it is not a little singular that it should appear in our climate as an epidemic limited to an institution in Dublin. Odd cases have at times been brought to our ports, but as a rule do not spread.

The Chelsea hospital is not yet "out of the wood." The Home Secretary has declined the request of the vestry to appoint an official inquiry, as he has full reliance on the impartiality of the independent inquiry that has been held. This he reads as a condemnation of the management and of the staff. You will remember that I foresaw the medical staff would be made the scapegoat, as usual in all hospital scandals. The cool assurance of the managing committee in proceeding to elect a new staff when the old resigned, is just what might be expected from an ordinary hospital committee. But this one was involved in the same condemnation—only, as an Irishman says, "more so"—as the staff. The ladies' committee seem to be able to show the others the proper course of conduct, for most of these ladies have sent in their resignations. The managers should do likewise, and the governors would do well to make a clean sweep of all the lay committeemen, and start afresh with new management by new men. If any of the staff are still to be scapegoats, let them all go too into the wilderness of unrecognized medical service. Then, if the profession were worthy of its position, no one should succeed them as unpaid officers. Let the public pay their doctors, and they would then appreciate their value. Unpaid medical service is the bane of the profession. A further development of this has lately occurred. The Great Northern Central Hospital is starting pay wards. Patients are to be admitted at two guineas per week. The honorary staff is to attend the pay wards on the same terms as the other parts of the hospital. Delightful, is it not? A department to be run at a profit, and the doctors to do everything for nothing. This is the notion of managers of our charitable institutions. Ah! "Charity, what crimes are committed in thy name."

DANGER FROM INDISCRIMINATE HOT INTRA-UTERINE IRRIGATIONS.

To the Editor of the Medical Record.

Sir: In the Medical Record of October 6th is an excellent article on the management of abortion. In the closing paragraph, however, the recommendation is made that "in septic cases large, *hot*, antiseptic intra-uterine injections should follow the cleansing of the uterus." The italics are mine. In justice to the author I would say that I have repeatedly seen the same recommendation by good authorities, and have witnessed the procedure carried out by eminent men. Yet it is this very recommendation and practice which I must enter a vigorous protest against as illogical and dangerous.

Of the value of curetting or otherwise clearing the uterine cavity, with, in suitable cases, gauze-packing and intra-uterine irrigation, in cases of septic metritis following abortion, miscarriage, or childbirth, there can be no doubt. As to the value of antiseptic douches there is no question. That *hot* intra-uterine irrigations are invaluable in their proper place I am ready to concede. But is this the place for a hot douche?

I may state here that I have repeatedly observed cases of acute septic metritis which were curetted, the curetting being followed by the hot douche, and the douche almost as uniformly followed by a severe chill (often before the operator had left the room), the chill being in turn followed by fever, sweating, and other evidences of acute septicæmia. I have seen this occur repeatedly in the same patient every time the procedure was gone through with until the patient and her friends begged the doctor not to interfere and "bring on those dreadful chills," while the doctor assured her that the douches were essential to her recovery. I have seen this occur in private practice under expert gynecologists; I have seen it occur in the routine of hospital work; I have seen it occur in the practice of the country doctor; I have seen it altogether too frequently.

Cases of septic trouble following abortion are common—much too common. A woman has a miscarriage, perhaps a criminal miscarriage, at the fourth month let us say. The fœtus is expelled. Shreds of placental tissue and decidual membrane come away, but some remain. The patient has a temperature of 100° or 101° F. The pulse is good. There is mild septicæmia. The lochia is dark, bloody, profuse, has a gangrenous odor. If left to nature she will keep on in this state for some time. Eventually pelvic peritonitis, cellulitis, or general septicæmia will result, or more fortunately a gradual separation of the decidua occurs and a protracted convalescence follows, complicated perhaps by prolonged metrorrhagia and chronic metritis or other sequelæ.

But the doctor is called. He is *fin de siècle*. He is acquainted with bacteria,

> "And various animalculæ
> Of middle, high, and low degree."

He uses antiseptic vaginal washes. Good! He sterilizes his hands and instruments. Better! He clears out the uterus thoroughly. Best yet! Then he uses a hot intra uterine irrigation. Error in judgment! He kills a few more putrid or septic germs, but he checks drainage.

Why?

What have we to deal with in the septic cases referred to? A uterus, the cavity of which has just been cleared of decomposing *débris*; but a uterus, the structure and substance of which is infiltrated with septic germs; a uterus with its blood-vessels and lymphatics filled with morbific products; a uterus which under rational treatment, now that the focus of infection is removed, will pour out offensive discharges for days and drain itself of the poisonous products as nature intended, by a free lochial discharge. That is the object at which we all aim—elimination.

Now use a hot injection into the uterine cavity. The most constant and powerful action of a hot douche is to check hemorrhage. It contracts the blood vessels. It contracts the uterus. It does it rapidly, thoroughly; watch the result. The blood-stained malodorous discharge is checked; drainage is thus interfered with; the distended vessels filled with poisonous products, cut off from their natural sewerage into the uterine cavity, and compressed by the sharp contraction of the uterus under the stimulus of a hot injection, empty themselves into the general circulation, and a chill, with general septicæmia takes the place of what had been prior to this time a more localized septic process. This occurs more frequently in the septic states following childbirth than in those following early abortions, simply because the uterus being larger contains more septic material to be forced into the general circulation. As well apply an Esmarch bandage from the hand up to the shoulder in a cellulitis of the arm as a hot injection into the cavity of a uterus swarming with bacteria and infiltrated with septic poison.

This argues nothing against intra-uterine irrigation properly performed and used with good judgment. But the use of hot injections immediately following the curet-

ting of a septic uterus is far too common. That their use is dangerous is reasonable and logical in theory, and any careful observer will find that the theory is borne out by clinical experience.

Why use a hot intra uterine irrigation, when a warm one would be more comfortable to the patient, would be far safer, and would fulfil every indication?

W. N. MacArtney.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 20, 1894.

	Cases.	Deaths.
Tuberculosis	61	102
Typhoid fever	30	8
Scarlet fever	40	2
Cerebro-spinal meningitis	1	2
Measles	30	0
Diphtheria	141	42
Small-pox	2	0

Apomorphine and Hysterical Attacks.—Rosser recommends one tenth of a grain of apomorphine, hypodermically, to break up and prevent the recurrence of hysterical attacks.

Breakfast for Chlorotic Girls.—Dr. Carl Von Noorden, in the *International Medical Magazine*, May, 1894, speaking of the dietetic treatment of chlorosis says: "Most chlorotic girls feel weakest and worn out during the hours of the forenoon, and incapable of any proper kind of work. This condition is uncomfortable, and directly harmful from the educational point of view. The best remedy is the English fashion of a good hearty meal at the beginning of the day. Chlorotic girls are advised to drink half a litre of milk of the best quality, while still in bed, and to do it very slowly, taking fifteen minutes to drink the quantity prescribed. Half an hour later they should rise and be rubbed with a dry, rough, woollen towel. Then comes the breakfast, consisting of a small cup of tea, one or two slices of buttered toast, and plenty of meat. Two hours and a half later some bread and butter is to be eaten, together with two eggs, this to be followed by a quarter of a litre of milk. A glass of sherry is now permissable, if special reasons warrant it. This morning regulation of diet makes the forenoon hours quite comfortable. Fixed rules for other meals are of less importance."

Death-rates and Race.—I will not weary you with further details of figures, which those of you who are specially interested in the subject will find in the reports of the Vital Statistics of the Eleventh United States Census, but will merely say that the corresponding data from Boston, Philadelphia, Baltimore, Washington, and from the New England States as a whole, taken with those from New York State and New York City, and with those derived from a special investigation of over 10,000 Jewish families, including over 50,000 persons, lead to the following conclusions as being probable for the United States: 1. The colored race is shorter lived than the white, and has a very high infantile death rate; it is specially liable to tuberculosis and pneumonia, and less liable than the white race to malaria, yellow fever, and cancer. 2. The Irish race has a rather low death-rate among its young children, but a very high one among adults, due to a considerable extent to the effects of tuberculosis, pneumonia, and alcoholism. 3. The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. 4. The Jews have a low death rate and a more than average longevity; they are less affected than other races by consumption, pneumonia, and alcoholism, but are especially liable to diabetes, locomotor ataxy, and certain other diseases of the nervous system.—Dr. J. S. Billings.

Morphinomania in the Medical Profession.—Dr. Jules Rochard, in the *Union Médicale*, draws a gloomy picture of the increase of the morphine habit in France and elsewhere. The habit, he finds, becomes incurable at the end of six months of indulgence. The fair sex and the doctors are, in his opinion, the most deeply addicted to morphine. He draws an unpleasant comparison between the behavior of each kind of delinquent. Women, he says, delight in declaring how they indulge in this vice, and show ornamental hypodermic syringes to their friends. Dr. Notet states that a lady having broken the needle of her syringe in a remote country village, wounded her skin with scissors and thrust the stump of the needle into the wound, injecting herself in this manner till a new syringe arrived from Paris. Men, Dr. Rochard declares, and especially medical men, the bulk of male morphine injectors, take the greatest pains to hide their vice. Hence the precise number cannot be estimated. He believes, however, that doctors and persons associated with them form nearly half the total of men addicted to morphine.

Medical Sculpture.—Dr. Paul Richer, the director of the Salpêtrière laboratory, has been recently engaged in enriching that renowned neurological school with a series of heads and busts reproducing certain types of pathological deformities. In the last number of the *Iconographie de la Salpêtrière* there appears the photograph of one of these busts, representing a subject affected with primary progressive myopathy. This patient was frequently shown by the late regretted Professor Charcot at his cliniques as a perfect example of the myopathic physiognomy of the Landouzy-Déjerine type.

Catharsis by Means of Hypodermatic Injections Impossible.—The editor of *The Medical Age* believes it to be absolutely proved that catharsis cannot be induced by the introduction beneath the skin of purgative elements. He relates some of his own experiences. A number of tablets of both sulphate of magnesium and sulphite of soda were prepared, embodying the utmost quantity available for hypodermatic use. These were employed in some thirty instances, and a quantity distributed among a half-dozen other physicians, who used them in from fifteen to fifty cases each. In no instance was any cathartic effect observed, except now and again when a patient was informed of a probable purgative action—here the results were only such as would accrue to "suggestion." In one instance the physician experimented upon himself, making use of two tablets of magnesium sulphate of one and one half grain each, injecting into the upper and external aspect of the thigh at 8 P.M.; at 10 P.M. he retired to stool, but felt no assistance had been given to defecation—was rather constipated than otherwise. Being very easily influenced by laxatives, and the hour of defecation being that of daily habit, he is quite positive that no better test could have been given of the utter inefficiency of the drug. Further, says *The Age*, the evidence *per se* is conclusive that neither magnesium sulphate nor soda sulphite can be employed hypodermatically as a purgative, even were one sure of a cathartic effect, since the dose available for the sub-cellular method is entirely too small and the method itself, so far as purgative drugs are concerned, too unsatisfactory for adoption. The hypodermic holds the keys that bind, but not those that loose.

Trichinosis.—At a recent meeting of the Pathological Section of the Buffalo Academy of Medicine, Dr. Frank J. Thornbury made a preliminary report on 500 cases of trichinosis observed in his work as Inspector in the Bureau of Animal Industry of the United States Department of Agriculture, at Buffalo, N. Y. Special attention was given to conditions in the pathology not previously spoken of, comprising peculiarities of encapsulation of

the trichinæ, degenerations, calcifications, pigmentations, etc. A large number of photographs and drawings were presented which showed these conditions, and an extensive exhibit of rare and interesting slides under microscopes was given. Reference was made to the relative frequency of location in the hog and extent of infection of the different parts examined according to the Government system of inspection. The parts examined comprise the diaphragm, neck, and loin respectively. The entire number of cases in which trichinæ were found in the diaphragm was 399, in the loin, 291, in the neck, 171. The average number of trichinæ found in the diaphragm in the entire number of cases was 8, in the loin 5, and in the neck 3. In the 500 cases studied all of the three parts were infected in 200 instances, two parts were involved in 136, and one part only was infected in 164 cases. The part of predilection for the trichinæ therefore appears to be the diaphragm. This is explained by its close proximity to the digestive tract, from which the trichinæ primarily migrate. It would appear also that the tenderloin is not to be preferred as an article of diet. This comprises the psoas muscles. Where the hogs are extensively affected the trichinæ are also usually found in the hams, shoulders, sides, and, in fact, in almost any part of the body. Dr. Thornbury has also studied the subject of trichinosis in man with the following results: Of 21 subjects examined in the dissecting-room of the University of Buffalo, trichinæ were found in the muscles in three cases. The muscles principally affected were those of the extremities (one slide from the biceps of the arm containing fifty of the parasites), the diaphragm, intercostals, abdominal muscles, the psoas, etc. Many of the trichinæ were old and calcified, others were still alive. One of the cases of infection was not very extensive, the trichinæ being scattered in limited numbers through the muscles of the thorax and abdomen. This observer contends that many cases of chronic muscular rheumatism are disguised under this head. This is corroborated by the continued observation of cases of trichinosis in the acute stage and seeing the patient suffer from muscular pains which under ordinary circumstances would be regarded as simply rheumatism.

Bicycling.—The Paris Academy of Medicine recently discussed the question of bicycling, and came to the conclusion that this form of exercise might be attended with great danger to the heart in those who suffered from any affection of this organ. One speaker referred to the recent death of three persons from heart disease while riding bicycles, and asserted that not less than one thousand wheelmen in Paris were suffering from cardiac affections, and were in danger of the same fate.

Suicide.—The number of suicides in England has increased so much in recent years, that the question has been raised whether the elimination from insurance policies of the clause dealing with that subject has not tended to encourage self-destruction. One of the leading insurance journals has taken the matter up, and concludes that the cause must be sought elsewhere; and that it is only very rarely that a man puts an end to his life from a desire to benefit his family, although it is possible that, having already made up his mind to kill himself, he may take out extra insurance for the sake of his wife and children. Such deliberate suicide is, however, among the most seldom of occurrences. Some German statistics recently published show that Saxony heads all the other states of the empire in the matter of suicides, the percentage being almost double that of Prussia. One per cent. of the suicides are children under twelve.

Dr. Sacharjin, the Czar's regular medical attendant, is a most eccentric person. When called to see a patient, he insists upon the removal of all female attendants during the time of his visit, and allows no one to utter a word in his presence except in reply to his questions, and in many other ways he is noted for his blunt frankness, often rudeness, toward his patients, including those of the highest rank. When the Czar's illness became so alarming that it was thought best to have his physician constantly within call, Dr. Sacharjin could with difficulty be persuaded to come, and when he did finally consent to take up his residence temporarily in the palace, he positively refused to occupy the suite on the third floor which had been provided for him, because he was accustomed to the ground floor, and he required apartments to be provided for him there. When the Czarina asked him to lunch at the imperial table he declined, on the ground that he was not in the habit of taking his meals with women. He was allowed to eat in his own rooms. In spite of his eccentricity he is in great demand among the aristocracy of Moscow and St. Petersburg. He is reported to be worth 7,000,000 rubles, made in the practice of his profession.

Wouldn't Trade with Him.—The following story is told by the *Medical Herald*, at the expense of Dr. F. C. Hoyt, superintendent of the insane hospital at Clarinda, Iowa. One of the chief attractions for him in the Midway was Hagenbach's "trained animal" show. He is noted for his sympathetic nature and, after witnessing the performance, sought an opportunity to converse with the lion-tamer. After a few preliminary inquiries as to the disposition of the animals, the doctor proceeded to sympathize with the king of the den concerning his lot, isolated as he was from civilization, and compelled to associate entirely with the wild beasts. Doctor Hoyt digressed eloquently upon the uncertainty of life, and expressed his great satisfaction at not having to play with the monster lion, who was nervously pacing his cage and growling. The keeper listened attentively, only remarking that he was "used to it." When the doctor turned to depart, the "king" courteously asked for his card. It read: "Iowa Hospital for the Insane." "Great guns!" gasped the tamer, "I wouldn't trade jobs with you for a million dollars."

Data on Keeleyism.—Rev. Dr. J. M. Buckley, editor of the *Christian Advocate*, of New York (150 Fifth Avenue, New York City), solicits specific data in reference to "Keeley Institutes." He asks only for information from physicians and ministers, and desires to make a thorough and impartial investigation of the Keeley business. He will not, we think, be able to find anything very new or instructive, unless he is able to collect the facts regarding relapses. The Keeley cure is atropine, strychnine, simple bitters, good resolutions, and a certain amount of hypnotism.

State Board of Medical Examiners.—An autumn examination will be held by the Pennsylvania Board. Its influence is already clearly felt in the solicitude shown by some of the medical schools concerning the fitness of students to pursue the study of medicine. It was rare in former years to hear the dean of a medical school advise a pupil not to enter or continue in the course unless indeed the student had paid all the fees that the college could exact. We hear now, however, occasionally of students being advised that they are not sufficiently prepared to enter upon the medical course. It is to be hoped that the Pennsylvania Board will maintain the position that was assumed in the first examination.—*Medical News.*

Anatomical Material.—The Association of American Anatomists has issued the following circular: "*Dear Sir*—At the last meeting of the Association of American Anatomists, the undersigned committee was appointed to 'consider the question of the collection and preservation of anatomical material, and to report, at the next meeting, what in their opinion are the best means of accomplishing these objects.' In order to make the work of the committee as comprehensive as possible, and to obtain information which will be of service in arriving at definite conclusions as to the best methods of accomplishing the purposes indicated in the resolution, the committee has deemed it desirable to send to the teach-

ers of anatomy, not only in this country, but abroad, this circular letter, with the questions appended, and respectfully to request answers thereto, as fully as they can be made.

"1. Is anatomical material obtained in accordance with a legal enactment, wholly or in part?

"2. If there is an anatomical law in your country or State, please send a copy of it to the chairman of this committee, Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, Pa. Please state whether the law is satisfactory, whether it is readily obeyed by those upon whom duties are imposed by it, and mention any improvements you would suggest, as to its requirements.

"3. Is the material received in good condition?

"4. What disposal is ultimately made of the remains?

"5. Please state what means are employed to preserve anatomic material for the purposes of dissection or operative surgery. If injections of preservative fluids are used, state their composition and the methods of use, at what point injections are made, whether at the heart or in the large arteries, and their effect in accomplishing the preservation, with any changes in the color or the character of the tissues. What length of time can material be used in dissection by the methods employed by you? If preservation by means of 'cold storage' is employed, please state the cost of the machinery which it was necessary to construct for this purpose, and what means are taken to prevent decomposition after the subject is placed upon the table for dissection.

"6. Please state the cost, by the method employed by you, for each subject: *a*, for receiving it; *b*, for injecting and preserving it.

"7. Do you obtain an adequate supply of material for the purposes of anatomic instruction? How many students are assigned to each subject, and what is the method of allotment?

"8. Please give any information which you may deem of importance. As the report will be general in character the name of the informant or institution will not be mentioned by the committee unless requested.

"Your compliance with the request of the committee, at an early date, will be fully appreciated as rendering assistance to it in accomplishing its work, and it desires to thank you for the same in advance.

J. Ewing Mears, M.D.,
Joseph D. Bryant, M.D.,
Thomas Dwight, M.D."

A Medical School for Women is to be established in St. Petersburg through the initiative of Prince Wolkowski, the educational representative of Russia at the World's Fair in Chicago.

Medical Etiquette Among the Ancients.—In an old Latin poem, the manuscript of which has been found in the National Library at Paris, occur some interesting pages in which the author, whose name is unknown, explains the proper conduct of a physician. (*Boston Medical and Surgical Journal.*)

"On approaching the patient, you should assume a calm expression and avoid any gesture of greed or vanity; greet those who salute you with an humble voice and sit down when they do. Then, turning to the sick person, ask him how he is, and examine his pulse and his urine. To the patient you promise cure, but immediately on leaving the room you say to the relatives that the disease is grave. The result will be that, if you cure him, your merit is greater and you will receive the greater praise and fee; while, if he dies, they will say that you had no hope from the first."

This counsel has been well followed by some physicians to the present day. The directions for table manners are equally amusing:

"When those who preside over the house ask you to the table, conduct yourself in a seemly manner. Each time that a new dish is brought on, do not fail to ask for the condition of the patient. This will give him great confidence in you, as he sees that in the midst of the variety of the repast you do not forget him. On leaving the table, return to the patient, and tell him that you have dined most excellently, and that everything was served to perfection. The sick person who was anxious about these points will rejoice at your words."

Professor Amoyama, of Tokio, who accompanied Dr. Kitazato to Hong-Kong to study the plague, contracted the disease and nearly lost his life. Happily, however, he finally recovered, and has not returned to Tokio.

BOOKS RECEIVED.

Food and Feeding. By Sir Henry Thompson. 8vo, 222 pages. Published by Frederick Warne & Co., London and New York City. Price, $1.25.

The Horse. By George Armitage, M.R.C.V.S. 8vo, 271 pages. Illustrated. Published by Frederick Warne & Co., New York and London. Price, $1.00.

Medical Register. Dr. John Shrady, Editor. Published by G. P. Putnam's Sons, N. Y. Price, $2.50.

The Senile Heart. By George William Balfour, M.D. 8vo, 300 pages. Published by Macmillan & Co., London. Price, $1.50.

Transactions of the Medical Society of New York for the Year, 1894. Published by the Society.

Directions for Laboratory Work in Bacteriology. By Frederick G. Novy. 8vo, 200 pages. Illustrated. Published by George Wahr, Ann Arbor, Mich. Price, $1.50.

Therapeutics—Its Principles and Practice. By H. C. Wood, M.D. 8vo, 1007 pages. Published by J. B. Lippincott Co.

Prescribing and Treatment for Infants and Children. By Philip E. Muskett. 16mo, 334 pages. (Third Edition.) Published by Young J. Pentland, Edinburgh and London.

Bread from Stones. A New and Rational System of Land Fertilization and Physical Regeneration. 12mo, 135 pages. Published by A. J. Tafel, Philadelphia, Pa. Price, 25 cents.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. Published by Lea Brothers & Co., Philadelphia, Pa. 8vo, 470 pages.

Transactions of the Ohio State Medical Society. 1894. 8vo, 488 pages. Published and Printed by the Society, Toledo, O.

Laboratory Manual of Elementary Chemical Physiology and Urine Analysis. By John H. Long. 8vo, 365 pages. Illustrated. Published by E. H. Colegrove & Co., Chicago, Ill. Price, $2.50.

Diseases of the Chest, Throat, and Nasal Cavities. By E. Fletcher Ingals, M.D. 8vo, 686 pages. Illustrated. Price, $5.00. William Wood & Company.

Transactions of the American Surgical Association. Edited by DeForest Willard, M.D. 8vo, 332 pages. Illustrated. Published by William J. Dornan, Philadelphia, Pa. 1894.

Syllabus of Lectures on Embryology. By W. P. Manton, M.D. 8vo, 125 pages. Illustrated. Published by the F. Davis Co., Philadelphia, Pa. Price, $1.25.

When All the Woods are Green. By S. Weir Mitchell. 8vo, 417 pages. Published by The Century Co., New York City. Price, $1.50.

Healthful Womanhood and Childhood. Plain Talks to Non-professional Readers Relative to Healthy and Diseased Conditions Peculiar to Women, and Concerning the Care of Young Children. By Henry Bixby Hemenway, M.D. 8vo, 290 pages. Published by V. T. Hemenway & Co., Evanston, Ill. Price, $2.00.

Mugwumps. By One of Them. 8vo, 328 pages. Published by Arena Publishing Co., Boston, Mass.

Addresses, Papers, and Discussions in the Section on Surgery and Anatomy. At the Fifty-fifth Annual Meeting of the American Medical Association, held at San Francisco, Cal., June 5 to 8, 1894. Printed at the Office of the Journal of the American Medical Association, Chicago, Ill.

A Manual of Human Physiology. By Joseph H. Raymond, M.D 8vo, 382 pages, illustrated. Published by W. B. Saunders, Philadelphia, Pa. Price, $1.25.

Essentials of Diseases of the Ear. By E. B. Gleason, M.D. 8vo, 147 pages, illustrated. Published by W. B. Saunders, Philadelphia, Pa. Price, $1.25.

Text-book on Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimbler 8vo, 268 pages, illustrated. Published by Macmillan & Co., New York. Price, $2.50 net.

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Original Articles.

TREATMENT OF DIPHTHERIA.[1]

By A. CAMPBELL WHITE, M.D.,
NEW YORK.
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THE cases of diphtheria included in this investigation were subjected to three different modes of treatment.

In the first series, the nasal and throat cavities were thoroughly irrigated, every one to three hours, with warm salt solution, until the pseudo-membrane had disappeared, then from one to three times daily until the entire disappearance of the bacilli. For irrigation, the fountain or Davidson syringe was used.

In the second series, the cases besides receiving the treatment given in the first series, had their nares and throats thoroughly sprayed every three hours (except during the night) with solutions of peroxide of hydrogen, which varied from twenty five per cent. to five per cent. in strength. The special form of peroxide used was that known under the name of pyrozone.

The following tables show the results obtained by these comparative tests:

TABULATION OF ALL CASES, SHOWING THE DAY OF THE DISEASE ON WHICH THE PSEUDO-MEMBRANE DISAPPEARED.

Day of Disease.	Salt Water Irrigation and Pyrozone Spray.	Bichloride Irrigation.	Salt Water Irrigation.	Total Number of Cases.
1	..	..	1	1
2	..	2	2	4
3	1	2	3	6
4	2	1	4	7
5	2	1	3	6
6	2	2	4	8
7	2	2	5	9
8	2	2	6	10
9	2	1	5	8
10	1	3	4	8
11	2	1	..	3
12	1	..	1	2
13	2	1	1	4
14	1	..	1	2
15	2	..	..	2
16	1	..	..	1
17	..	2	..	2
18	..	..	..	..
19	..	..	..	..
20	..	..	..	..
21	..	..	..	..
22	..	..	..	..
23	1	..	..	1
	24	20	40	84

TABULATION OF ALL CASES, SHOWING NUMBER OF DAYS ON WHICH BACILLI PERSISTED AFTER DISAPPEARANCE OF PSEUDO-MEMBRANE.

Number of Days After Disappearance of Membrane.	Salt Water Irrigation and Pyrozone Spray.	Bichloride Irrigation.	Salt Water Irrigation.	Total Number of Cases.
	..	4*	..	4
1	..	..	..	..
2	3	3	1	7
3	2	2	..	4
4	1	1	1	3
5	..	..	..	..
6	1	1	3	6
7	..	..	3	3
8	..	1	5	6
9	1	1	2	4
10	2	..	7	9
11	..	..	4	4
12	2	1	6	9
13	1	1	4	6
14	1	.	1	2
15	1	3	1	5
16	1	1	1	3
17	3	..	..	3
18	2	..	..	2
19	..	..	..	..
20	1	..	..	1
21	..	..	..	..
22	1	1	1	3
	24	20	40	84

* Before membrane. In these four cases bacilli disappeared one day before membrane. In those cases treated with bichloride irrigation only were cultures taken before disappearance of membrane, while in some cases treated with the salt-water irrigation examinations for bacilli were not made for two or three days after membrane had disappeared.

The third series of cases were subjected to the same treatment as the first, except that solutions of bichloride of mercury were substituted for the salt-water solution.

[1] Being the substance of a report to the Health Department of the city of New York, on a series of investigations relating to the duration of the false membrane and persistence of Klebs-Loeffler bacilli in the throats of patients subjected to systematic irrigation with antiseptic or cleansing solutions.

The nasal cavities were irrigated every eight hours with a warmed 1 to 4,000 solution, and the throat every three hours with a 1 to 3,000 solution.

Besides this local treatment, nearly all the cases received frequent doses by the mouth of the tincture of the chloride of iron and of alcoholic stimulants.

TABULATION OF ALL CASES SHOWING THE DURATION FROM FIRST APPEARANCE OF PSEUDO-MEMBRANE TO DISAPPEARANCE OF BACILLI.

Number of Days From Appearance of Membrane to Disappearance of Klebs-Loeffler bacilli.	Salt Water Irrigation and Pyrozone Spray.	Bichloride Irrigation.	Salt Water Irrigation.	Total Number of Cases.
5	..	2	..	2
6	..	..	..	..
7	..	..	..	..
8	2	..	..	2
9	..	1	1	2
10	1	2	1	5
11	1	1	5	7
12	..	..	..	..
13	1	2	2	5
14	..	.	..	..
15	1	1	2	4
16	1	.	3	4
17	1	3	4	8
18	1	..	9	10
19	2	1	2	5
20	1	2	4	7
21	1	2	4	7
22	1	1	..	2
23	2	..	1	3
26	1	..	1	2
29	3	..	..	3
30	2	1	1	4
33	2	..	..	2
	24	20	40	84

RECAPITULATION.

	Average Age of Patients.	Average Number of Days of Membrane Before Treatment.	Average Days of Membrane in Hospital.	Average Total Days of Membrane.	Average Days of Bacilli After Membrane.	Average from first Appearance of Membrane to Disappearance of Klebs-Loffler Bacilli	Number of Mild Cases	Number of Severe Cases.	Number of Cases.
Salt water irrigation and pyrozone spray	Years. 13	3	6.6	9.6	9.6	19 2	17	7	24
Bichloride irrigation	10 5	1.6	6.3	7.9	7.4	15.3	15	5	20
Salt water irrigation	7.75	2.4	4.5	6.9	10.2	17.1	28	12	40
Total	10.4	2.3	5 8	8.2	9	17 2	60	24	84

In using the pyrozone three different strengths were employed, twenty five, twelve and one-half, and five per cent. solutions. With the twenty five per cent. solution the average time for disappearance of bacilli after disappearance of membrane was 6.8 days, a somewhat better result than with bichloride or salt solution, but it was very noticeable that the pseudo-membrane treated with the stronger solutions of pyrozone lasted much longer than would be expected from the severity of the disease, and certainly much longer than in those cases where the five per cent. solution of pyrozone or the salt or bichloride solution was employed. Out of 16 cases treated with the twenty five and twelve and one half per cent. solutions of pyrozone ten had membrane from ten to sixteen days, while in another quite bad case traces of the pseudo membrane persisted for twenty-three days.

The average time from first appearance of diphtheritic

membrane to the disappearance of bacilli in the twenty-five per cent. cases was 17.75 days, this not being quite as good a record as that made by the bichloride solution, and about the same as that made by the water irrigation. As all the pyrozone cases received, as mentioned before, thorough washing of throat and nose before and after treatment with the spray, the results as shown in the tables would certainly indicate that the addition of spraying strong solutions of peroxide to the treatment with plain water irrigation had no good results. On the contrary, it would seem from the long continuance of the diphtheritic membrane in those cases treated with the twenty-five and twelve and one half per cent. solutions that they acted as an irritant to the already inflamed mucous membrane.

The five per cent. solution caused no noticeable irritation. The pseudo membrane disappeared in the usual time, and it would certainly appear to be the best strength (if any) to use for this purpose.

Among the twenty cases on the bichloride treatment, one, a boy four years old, developed mercurial stomatitis in quite a severe form, and another showed symptoms of intestinal irritation; both of them were undoubtedly caused by swallowing bichloride solution during irrigation, as they had not been given internally mercury in any form. Both soon recovered after the cessation of the bichloride irrigation.

Laryngeal cases have not been included in this list, as the treatment tried in these cases could have no possible effect upon membrane or bacilli in the larynx. In six cases in which these three tests were tried, it apparently had no effect whatever, the bacilli being found in the larynx from thirty to forty days after admission to the hospital.

Since the tabulation of the cases in this report was made, I have had two cases in which the Klebs-Loeffler bacilli persisted for twenty-nine days and forty-eight days respectively after disappearance of membrane. These cases received the bichloride irrigation treatment as described above, until all signs of the bacilli had disappeared. This would make the average number of days for the persistence of the bacilli after disappearance of membrane and the entire duration of the disease about the same in the bichloride cases as in those where no antiseptic was used.

The results obtained in the special series of forty cases treated with plain or salt-water irrigation are similar to those obtained in over six hundred other cases treated in a like manner; while frequent and careful experiments with nearly all the well established antiseptics have given practically the same results accomplished by the pyrozone and bichloride of mercury in this series of experiments.

The conclusions derived from this series of cases, together with investigation and observation on a much larger number of cases, lead us to believe:

1. That frequent washing of the air-passages attacked by diphtheria lessens the duration and amount of diphtheritic membrane.

2. The addition of antiseptics, in sufficient strength to be germicidal, to the irrigating fluid is irritating to the mucous membrane, thereby causing extension and persistence of false membrane rather than the effect desired.

3. The addition of antiseptics to the irrigating fluid is liable to cause systemic poisoning and disagreeable complications from the swallowing and absorption of some of the fluid used, *e.g.*, the two bichloride cases cited above.

4. Spraying the throat (also the pernicious treatment of swabbing), whatever solution is used, can have no good effect, as the parts reached by the spray must necessarily be very limited, excepting possibly in the hands of an expert. Furthermore, the spray cannot be used with young children, as anyone can testify who has tried it. This is especially true of some solutions where it is necessary to use a glass syringe.

5. Frequent cleansing of the throat and nasal cavities with a bland solution, such as plain warm water or normal salt solution, is easier of application, is more agreeable to the patient, and does all that any antiseptic solution can accomplish, either upon duration of the membrane or the period of isolation.

A CONTRIBUTION TO THE STUDY OF MODERN AMPUTATION.

By W. L. ESTES, A.M., M.D.,

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THE writer had occasion to search for some recent statistics of mortality-rates after major amputation, and he was disappointed in finding very few available contributions from American surgeons to this formerly very prominent and important, but now somewhat neglected, branch of surgery. Improved methods of conservatism have reduced very largely the necessity for amputating limbs, but aseptic practice and bloodless methods have also so reduced the mortality rate after amputation, that statistics of the older writers are obsolete and useless as standards of comparison, and misleading to students of surgery.

This study, based upon the statistics of a single operator, working in a modern hospital, and who has endeavored to carry out as strictly as practicable aseptic, and especially bloodless, methods, is offered as a contribution to what must still remain a very important branch of surgery, with the hope that it will stimulate other surgeons to report their results in this line, and so re establish the prestige of American practice in acute surgery.

This study is based upon 294 single major amputations, 38 complicated cases requiring two synchronous operations, 7 triple, and 1 quadruple operation, making altogether 340 major amputations.

Only 19 of these were amputations for pathological or diseased conditions, so that there were 321 amputations done for injuries to limbs, usually the result of great violence, as they were all cases from the railroad, mines, or factories. In many of the cases there elapsed several hours between the time of the injury and the reception of the patient at the hospital, and commonly they had to make pretty long journeys to reach the hospital.

In considering the conditions requiring amputation, pathologic conditions will be left out entirely, and only conditions resulting from violence will be considered.

Conditions Calling for Amputation.—Esmarch[1] very pithily sums up the whole matter, in speaking of injuries in war, by saying: "The removal of a limb is, as a rule, only indicated when by so doing the prospect of saving the life of the wounded is rendered essentially better than by the conservative treatment." I believe one would do well to follow this rule in civil practice also. Aseptic practice has made conservative attempts much safer than in former years, however, and conservatism ought therefore to be given a much wider range than formerly. Evulsion of a limb, of course, admits of no question. Compound fractures, if the bones were badly comminuted, formerly called for amputation. Now they rarely do, unless too great a length of bone be implicated, and unless the soft tissues have suffered severe laceration. It is my rule to attempt to save a limb if not more than two inches of the principal bone is comminuted. In attempting to estimate whether or not the soft tissues have undergone too great injury for any conservative attempt, I think the muscular laceration should receive less consideration than the degree of injury to the skin. I have over and over again saved limbs having comminutions of the bones, and bad lacerations of the muscles, but only slight injury to the skin. I have very rarely succeeded in saving a compound comminuted fractured limb having slight lacerations of the muscles, but extensive injury to

[1] Surgical Handbuch, p. 277.

the skin. I have found that one or two lacerations of the skin are not particularly hurtful; it is the complete death of the skin through immense pressure, as the weight produced by the pushing of a car-wheel, or heavy beam, or stone. If all the muscles at a given level are pulpified, amputation is of course indicated. As to whether injury to a principal vessel or system of vessels calls for amputation in a case of compound fracture in every instance, I should say decidedly—no. Serious injury to the femoral vessels or brachial vessels high up, by a compound fracture, usually requires amputation, but one system of vessels in the forearm or leg may be entirely destroyed at a given level, and yet the limb be saved. The following case will illustrate: A man about thirty years of age, of stout build, while plastering a ceiling of a public building, lost his balance and fell from his scaffold to the floor, a distance of some ten feet; he came down on his feet in a standing position; his right leg gave way and he fell in a heap on the floor. He was picked up bleeding profusely, his right foot turned outward so that the sole was in the position of extreme talipes valgus. He was brought as soon as possible to the hospital. On examination it was found that the tibia was projecting through the skin and his drawers on the antero internal aspect of the leg, at the level of junction of middle and lower thirds. This fragment of bone was large, with sharp jagged spicules projecting. The skin had been lacerated almost half the circumference of the leg at this point, but by the sharp fragment, which occasioned very little contusion; the anterior tibial vessels were torn and bleeding. The fibula was fractured about the same level. Upon enlarging the wound and investigating further, the tibia, for two inches, was found comminuted. These fragments were removed, the anterior tibial vessels tied, and the ends of the principal fragments squared off. By a lineal incision over the fracture of the fibula this was exposed, two inches of the fibula removed to correspond with the tibia, and then both bones were wired. The shortening of limb threw the soft tissues up in a transverse rounded ridge. The man made a good recovery with a perfectly useful limb.

Compound dislocation of a large joint is stated by Ashhurst, and indeed by most older writers, as an imperative call for amputation. I have treated compound dislocations of all the large joints of the limbs, except the shoulder, conservatively, with excellent results. These compound dislocations are usually accompanied, in the cases I have seen, by fracture of at least one, or a part of one, of the bony surfaces of the joint. It is necessary, as a rule, to remove the small fragments of bone, but unless the principal vessels are torn, or the greater part of the circumference of the skin killed by pressure, I should never amputate primarily.

Great contusion and laceration of muscles, without fracture of a bone and little injury to the skin, I have found very rarely require amputation. Certainly no primary amputation should be done. The important point is to relieve the immense tension of the skin on account of the hypodermal effusion of blood and serum, by immediate multiple punctures of the skin, in order to drain away the effused fluid. No drainage-tubes should be used, nor should even a strip of gauze be employed as drain—only canalization—as the least local pressure will usually cause necrosis of the already badly nourished skin, and from this point infection is apt to occur.

Injury to the skin without serious injury to the deeper tissues, I have never found call for amputation. Sponge grafting and, if need be, skin grafting, after separation of the necrosed skin, usually avails to bring about a useful healing.

Whenever there is a question as to the advisability of an amputation, or any reason to doubt that an amputation is actually necessary in a given case, there is very little danger in postponing the operation, in the meantime keeping the extremity in an aseptic condition by thorough surgical cleanliness and perfect drainage. Of 132 complicated fractures of the bones of the extremities which I have treated in the last eleven years, most of these compound comminuted fractures, associated commonly with other serious injuries, 113 were cured, 6 improved, and 12 died; 1 unimproved, as he refused to be operated upon and left the hospital. Of the 12 deaths one died of delirium tremens, one had also fracture of three ribs and injury to the lungs, besides a fracture of the humerus and extensive lacerations of the scalp. One had also a fracture of the ilium and dislocation of the sacrum; one had head injury and cerebritis, of which he died; one died of apoplexy. So that only seven deaths could be charged to the complicated fractures directly. Two of these died of septicæmia. Both cases persistently refused amputation until they were thoroughly autoinfected. One hundred and four of these cases were complicated fractures of the lower extremity; of these 88 were cured, 5 improved, and 11 died; 28 were complicated fractures of the upper extremity; 25 were cured, 1 died, 1 improved, 1 unimproved (left the hospital).

Thirty six of these cases were operated upon conservatively, that is for the purpose of removing pieces of bone, uniting fragments, etc. Thirty were cured, limbs restored to full usefulness, 2 improved, 2 required amputation afterward. One of these died after the amputation, of septicæmia. This man refused absolutely to have his leg amputated at first. It was clearly a case for amputation, as all the soft tissues were badly comminuted as well as the bones. The conservative operation was done as a forlorn hope. The other case requiring amputation was done on account of the coincident injury to the axillary vessels resulting in a thrombus of the vessels.

One died of cerebritis following a head injury received at the same time. So that, except in the one case of septicæmia (which was the result of the obstinacy and ignorance of the man, and ought not to be classed as a case of conservative attempt), there was no death which could be laid to the conservative attempts, and 30 positive cures.

Schede, in Pitha and Billroth's "Handbuch der allgemeinen und speciellen Chirurgie," Zweiten Band, Zweiter Abtheilung, p. 25, quotes Volkmann as saying he (Volkmann) had treated 75 complicated fractures of the large bones of the extremities conservatively, without a single death; and Schede himself (vid. ibid.) treated 37 cases conservatively with only one death, due to delirium tremens, and fat embolus of the lungs. Volkmann was obliged to amputate in three of his cases, and Schede in four of his, for beginning gangrene.

Having settled the fact that an amputation must be done, the next point to determine is when shall the operation be done; that is shall it be done as soon as practicable after the injury, or shall it be postponed for several hours? In my opinion this point should be determined entirely by the condition of the patient when seen by the surgeon. It seems to me the height of bad judgment, in this day of aseptic methods, to amputate a limb when the patient is almost moribund from loss of blood, or nearly exhausted from a long rough journey, or not yet recovered from psychical or primary shock. In short, whenever a patient is almost exhausted for any reason soon after injury, I have found that a major amputation undertaken at once is usually followed by death. I have convinced myself, at least, that the condition ordinarily observed by the surgeon a few hours after a major injury, and usually called shock, is really a condition of acute anæmia.[1] To operate while a patient is in this condition, as a rule, is followed by the death of the patient. If, however, the hemorrhage be thoroughly controlled by Esmarch's tourniquet, applied over the crushed tissues if practicable, and if not practicable, applied at a point just above them, and the comminuted tissues and the uninjured parts of the limb thoroughly cleaned and disinfected, and an antiseptic dressing applied over all, the amputation may be deferred for twenty-four or thirty-six hours, or even longer; while by

[1] See Lehigh Valley Medical Magazine, January, 1894.

careful feeding and stimulation the patient may recover some strength, and the blood-vessels shall again have time to fill with fluid. Of the three cases of hip-joint amputations I have done for injuries, each patient was so nearly exsanguinated when the hospital was reached that no radial pulse, or a bare flutter of a pulse now and then, could be felt, and the patient seemed actually moribund. By the treatment suggested above, the amputation was deferred in two cases for thirty hours, and in the other case forty hours, and all of them recovered after the amputation. The former classification of (1) primary, (2) intermediate, and (3) secondary amputations, has lost much of its significance. Now intermediate amputation refers rather to deferred (simply element of time) operation. The former terrors, suppuration, septicæmia, and pyæmia, are rare; so that in my experience a so-called intermediate amputation is no more dangerous than a primary one.

If the patient is in good condition I believe the proper time to operate is immediately, as nothing is usually gained by waiting.

The next point is, Where shall the amputation be done? The former rule and dictum of the authorities, to operate as far away from the trunk as practicable, has met with some modification, since the almost universal use of prothetical apparatus after amputations. It is generally conceded that it is best to leave as much as possible in amputating the upper extremity at any point. With the lower extremity there are certain "points of selection." In a painstaking and well-written paper read before the National Association of Railway Surgeons in 1891,[1] Mr. Truax argues against all tarsal or medio-tarsal amputations; he gives scant license to Symes's amputation, and finally selects the junction of the lower and middle thirds of the leg as the point of selection when an amputation can be done so low down. As this is the product of long observation and experience as a manufacturer of prothetic apparatus, the opinion deserves some consideration. Mr. Truax argues, however, from the premises that tarsal amputations are followed, as a rule, by a condition of pes equinus, on account of the contraction of the tendo Achillis unantagonized, or at least not "balanced," by the extensors. Furthermore, he states that the stumps of tarsal or medio-tarsal amputations are usually painful. Counting the double amputations, I have had 12 Chopart, and 7 Hay amputations; all of these 19 stumps have been painless stumps, and have generally preserved useful extension. I cannot admit Mr. Truax's premises, and therefore think his argument worthless with reference to this point. If the well-known fact with reference to the bearing of a false leg be remembered, namely, that the weight does not come on the end of the stump, but on the sides of the extremity a little above the end (as an obtuse wedge fits into a conical cavity), one will not go far astray in fashioning his stump. If he remembers that the false limb must owe all its motion to the stump, he will be convinced that as long an extremity as is necessary for good leverage should be left whenever practicable. I quite agree with Mr. Truax that the upper part of the lower third is the preferable point for amputations of the leg, when it can be done; 75 of my amputations of the leg have been at or near this point. I feel convinced as much of the thigh as possible ought to be left in amputating above the knee, but when at all practicable, the knee-joint amputation, I think, should be employed if an amputation must be done as high up as the upper third of the leg. The mortality rate of amputations at the several points below the knee are so nearly the same, that this factor has no practical weight in determining the point of amputation.

Indeed, my experience corresponds with that of Volkmann's and Billroth's clinics, namely, that the danger of an amputation is not so much the region (the locale of the operation) as the size of the limb at the point of amputation. An amputation through the thigh of a small, weazened, dried up man, whose thigh may be so small that it can almost be spanned by the fingers of one hand, is not nearly so much of an operation, nor nearly so dangerous (the general condition of the patient being good), as an amputation through the calf of a big, well-muscled, and well developed man. I believe, therefore, that the increased danger of an amputation of an extremity near the trunk is due chiefly to the fact that the area of the dissection, the bulk of the severed tissues, is so much greater there than farther away. The reason of this is, of course, the larger the limb the greater the traumatism of the operation, more blood-vessels, more nerves, and more muscles are cut. Also, the larger the area of the wound the greater the danger of infection, and the more difficult is it to make the operation thoroughly aseptic, and to make the tissues fit well together and to drain perfectly.

Method or Technique of Amputation.—The first and most important point is to establish an aseptic condition of the limb at and about the point selected for the seat of operation. This is sometimes an extremely difficult thing to do, in many instances almost impracticable. In cases of individuals who are habitually dirty, and who have been mangled on the railroad, in a mill, or in a mine, filth, grease, coal, and sometimes soiled clothing, are fairly ground into the tissues. To make such a wound surgically clean is impracticable. It is my custom, in cases of injuries, to have all clothing removed as soon as the patient is in a condition to bear this, after reaching the hospital. The patient having been carried first into a reception-room, near the operation-room, but separated from it by a hall, the assistants begin at once to cut off all his clothing, and to remove each article separately in such a way as not to rub against nor into the lacerated tissues if it can be avoided. The nude patient is then covered by a clean blanket, and the crushed extremity, which has been temporarily dressed by the ambulance surgeon before his arrival at the hospital, is now inspected and is washed, first with the German green soap and hot water, then carefully shaved, and again washed with the soap and water, then rubbed off with alcohol, and then thoroughly washed and rubbed with 1 to 1,000 sublimate solution, and then gauze thoroughly wet with 1 to 1,000 sublimate solution is put over the laceration or wound of whatever kind, and the limb at the point selected for the amputation also encompassed in this wet dressing. Then the patient is taken on a clean stretcher, with only clean blankets over him, to the operation-room, and put upon the operation-table, and covered by a fresh relay of blankets used only for the operation room, and those brought in with him are taken away. All instruments having been previously arranged and sterilized, the patient is now anæsthetized, and during this time the operator and assistants carefully wash, brush, and sterilize their hands and nails. As soon as the patient is anæsthetized an Esmarch's band is applied as a tourniquet, the blood being driven back by raising the extremity for a short time, rarely by the Esmarch band applied from below upward, as this bruises already injured tissues. Hæmostasis accomplished, the limb is isolated and protected from the other limb and other surroundings by pure gum tissue and sterilized towels, and only the seat of operation left uncovered. The temporary covering is now removed and another thorough scrubbing of the limb at the seat of operation is done with alcohol or turpentine, and then with a 1 to 1,000 solution of sublimate. If the patient has been very dirty and there was a large accumulation of dead epidermis on the extremity before it was shaved, I believe with Lister that carbolic acid penetrates the epidermis better than sublimate solution, so I commonly use a five per cent. carbolic solution as well as the sublimate for a final disinfection. During this last sterilization or disinfection, the wound is kept sedulously covered and bandaged by wet sublimate dressings, as it is regarded as hopelessly infected in most cases, and except the washing and douching it gets in the reception-room, no fur-

[1] See Transactions National Association of Railway Surgeons, 1891.

ther attempt is made to clean it when an amputation is to be done.

As to the operation itself, there are in my judgment and practice two cardinal points only to be regarded: first, the flaps must be long enough and wide enough to cover the stump thoroughly without tension; and second, there must not be any hemorrhage. As a matter of fact, like most operators, I have learned to have preferences as to the kinds of flaps to be employed and the manner of forming them. I cannot absolutely deduce from my experience, however, that in the ordinary amputation the methods I employ are better than those used by other operators. For the upper extremity I almost invariably use antero posterior flaps for the forearm, and the circular or modified circular for the upper arm. For the shoulder joint I also like antero-posterior flaps, with the anterior flap about twice as long as the posterior. This method enables one to tie the brachial vessels before they are cut without any further inconvenience than a little care in dissecting the inner edge of the anterior flap until the vessels are isolated, ligated, and cut through. It also furnishes good drainage. For the lower extremity, I have rarely used any osteoplastic method in the foot. For working-men I think these stumps require too long a time for healing, and are of doubtful utility afterward. Hay's, Chopart's, and Symes's are my preferences in foot amputations. In Chopart's, and in Hay's, indeed, I have found it of great advantage to leave the extensor tendons long, and to unite them with the anterior flap. This results in preventing disagreeable contractions of the tendo Achillis, and gives freely movable stumps, in extension as well as flexion. In the lower third of the leg, both antero posterior and lateral flaps have given me great satisfaction. I believe that Teale's operation is likely to give trouble by the fact of the long lateral cicatrix it leaves, which is just in line and at the point for pressure of a false limb. In later years I have never used it. I have found the lateral flap method the best for all the regions of the leg. It gives the best drainage, least tension, and results in the most useful stumps. At the knee, and in the lower part of the thigh, long anterior and short posterior flaps I have found best, and nearly always employ. For hip-joint amputations I would employ the Dieffenbach Volkmann method when long flaps could be obtained, and should always tie the femoral vessels before cutting them. When short flaps are to be used I believe the method recommended recently by myself[1] and called the gradual dissection method, the best. This is a modification or amplification of Rose's method. It consists essentially in first forcing the blood up by Esmarch's band, when this is practicable or expedient, else by elevation; second, deligation of the femoral vessels by double ligatures at Poupart's ligament, and incising the vessels between the ligatures; third, gradual dissection of an anterior and posterior flap successively, taking the utmost care to ligate all known vessels before they are cut, and always securing immediately all small muscular branches as soon as they are cut. Exarticulation is performed as in other methods, after hemorrhage is controlled.

I always form my flaps from without inward. I never transfix. The muscles are cut long enough to unite over the sawed bone and at different levels—in order to make a hollow cone—and a periosteal flap is almost invariably used when the amputation is through the shaft of a long bone. The greatest care is used in securing and ligating all vessels, veins as well as arteries. Whenever a point persistently oozes after the tourniquet is removed, and torsion, or torsion and pressure, for a short time does not suffice, this is also ligated. When the medullary cavity bleeds or oozes it is packed with a bunch of sterilized catgut, which is covered in by the periosteal flaps. Catgut is invariably used as ligatures. Recently I have begun to put in provisional sutures of silk, with permanent sutures introduced during the anæsthesia and tied in long loops, and then pack the stumps with iodoformized gauze for twenty-four hours, in cases of persistent oozing, as frequently happens after an Esmarch tourniquet has been on for a long time. The gauze is removed after twenty-four hours and the flaps apposed by the sutures already introduced. In these cases the muscles are always held by the silver-wire quilled suture, which I almost always employ for this purpose. Ordinarily, however, the apposition is accomplished at once, as follows: If there is good reason to believe that the wound is aseptic when the operation is done, no douche is used unless persistent oozing requires it, then hot sterilized water is employed. The periosteal flap is brought down and fitted over the end of the bone; no suture is necessary, as a rule. Then deep sutures of silver wire are passed, beginning about five to six centimetres from the edge of the flap, through the skin and muscles of one flap, into those of the other flap and out through the skin at a point corresponding to its entrance; by means of two short quills, in the shape of a small wooden peg 1.5 ctm. long by 2 or 3 mm. in diameter, the flaps are brought together and the muscles firmly secured, and their surfaces apposed.[1] From two to four of these quill sutures are necessary for the purpose. Then interrupted sutures of silk, lastly a continuous catgut or small silk suture to nicely appose the skin. A small capillary drain of iodoformized gauze is used, for forty-eight hours. Dressings—dry iodoformized gauze and dry sublimated or heat-sterilized gauze. Over all a pad of absorbent cotton, and the dressing completed by a splint to hold the extremity quiet and lessen muscular twitchings.

The table on the following page shows the operations performed, the result, and percentage of mortality. In the list of single major amputations I have not included amputations done for purely euthanastic purposes, in cases of evulsion complicated with other serious injuries, when the patients arrived at the hospital in moribund and utterly hopeless conditions. In the list of double and triple operations, all operations are noted. While in nearly every case the condition of the patient was desperate, yet in none of the multiple operations did the patient die on the table, and I have thought it but fair to include all of them. In the double amputations it has been my custom invariably, in the last few years, to have my senior assistant amputate one limb while I was operating on the other. Thus the double amputations were strictly synchronous. This method saves time, and markedly lessens the quantity of the anæsthetic necessary to be given; this in my judgment is a very important point. It will be noticed that the multiple operations are not always all of them amputations. Whenever it was necessary to do an operation of a gravity equal to another amputation, I have included it as multiplying the amputations. The cases mentioned of lacerations of the scalp, with comminuted limbs, were no ordinary lacerations, but very extensive, and in themselves very dangerous wounds, and the operations for their repair were extensive and more difficult sometimes than the amputation which accompanied it.

Of the deaths following the single amputations, two were from septicæmia. One case had septicæmia when he was admitted, an old-fashioned "intermediate amputation" was done; the patient was in an extremely weak condition when admitted, and he died about five days after the operation, of exhaustion. The other case was the one mentioned in speaking of complicated, compound fractures—who persistently refused to have his leg amputated until he was almost moribund from septicæmia.

A third death occurred from croupous pneumonia fifteen days after amputation at lower third of thigh, when the amputation wound was practically well. Besides these cases but one other case lived longer than two days; it was an amputation of lower third of thigh, complicated by crush of the muscles of the other leg; it died in nine days, of exhaustion. So that, barring

[1] See Lehigh Valley Medical Magazine, January, 1894, and the Philadelphia Polyclinic, March 24, 1894.

[1] This is a modification of Lister's lead-plate suture.

these four cases, all the deaths occurred from exhaustion within forty-eight hours after admission.

LIST OF AMPUTATIONS.

SINGLE MAJOR AMPUTATIONS.	Number of Operations.	Deaths.	Mortality percentages.
Amputations of arm	27	1	3.70
Amputations of forearm	37	0	0
Amputations of foot, Chopart's	7	0	0
Amputations of foot, Hay's	2	0	0
Amputations of foot, Pirogoff's	1	0	0
Amputations of foot, Symes's	9	0	0
Amputations of leg, lower third	47	1	2.12
Amputations of leg, middle third	28	0	0
Amputations of leg, upper third	22	1	4.34
Amputations of thigh, lower third	44	5	11.36
Amputations of thigh, middle third	25	2	8.00
Amputations of thigh, upper third	8	1	12.50
Amputations at hip-joint	7	1	14.28
Amputations at knee-joint	17	1	5.88
Amputations at shoulder-joint	13	1	7.99
Total	294	14	4.76
SYNCHRONOUS DOUBLE MAJOR OPERATIONS.			
Amputation at shoulder-joint, and the other arm, lower third	1	0	0
Amputation at shoulder-joint, and the other arm, middle third	2	0	0
Amputation at shoulder-joint, and the other forearm, middle third	1	0	0
Amputation at shoulder-joint, and a leg lower third	1	0	0
Amputation at shoulder-joint and operation for compound depressed fracture of the cranium	1	0	0
Amputation of both arms	1	1	100
Amputation of arm, upper third, and leg, middle third	1	0	0
Amputation of arm, lower third, and forearm, middle third	1	0	0
Amputation of both forearms	1	0	0
Amputation of both feet, Chopart's	2	0	0
Amputation of both feet, Hay's	2	0	0
Amputation of one foot, Chopart's, and other leg, lower third	1	0	0
Amputation of one foot, Symes's, and other leg, lower third	2	0	0
Amputation of both legs	7	3	42.8
Amputation at knee-joint, and other leg, lower third	1	0	0
Amputation at knee-joint, and other leg, middle third	1	0	0
Amputation at knee-joint, and other thigh, lower third	1	1	100
Amputation of one leg, lower third, and exsection of the other ankle joint	1	0	0
Amputation of one leg, lower third, and other thigh, lower third	2	2	100
Amputation of one leg, middle third, and other thigh, lower third	2	1	50
Amputation of one leg, upper third, and other thigh, lower third	1	0	0
Amputation of both thighs, lower third	2	0	0
Amputation of both thighs, middle third	1	1	100
Amputation of one thigh, middle third, and all the toes of other foot	1	0	0
Amputation of one thigh, lower third, and operation for removing fragments and apposing, and draining of compound fracture of other leg	1	0	0
Total	38	9	23.68
SYNCHRONOUS TRIPLE OPERATIONS.			
Amputation of thigh, lower third, left arm, lower third, and half of right hand	1	0	0
Amputation of thigh, lower third, leg, middle third, arm, upper third	2	2	100
Amputation of thigh, lower third, leg, lower third, and closing and draining extensive laceration of the scalp	1	0	0
Amputation of thigh, lower third, arm, middle third, and closing and draining extensive laceration of scalp	1	1*	100
Amputation of thigh, middle third, right foot (Symes's), removal of fragments, apposition and drainage of compound comminuted fracture of right humerus	1	0	0
Amputation of both thighs, middle third, and closing and draining extensive laceration of scalp	1	1	100
Total	7	4	57.14
QUADRUPLE OPERATION.			
Amputation of thigh, lower third, leg, middle third, half of palm of the hand, and closing and draining extensive lacerations of scalp and forearm	1	0	0
Total	1	0	0

* Died of cerebritis, produced by the injury to head.

One of the deaths after amputation of both legs was from delirium tremens, on the fifteenth day, when the stumps were practically well.

Except one case, a man sixty-five years of age, who had both legs amputated in the upper third, and who died of exhaustion on the fifth day, all the fatal cases were young individuals—all under forty-five years of age, and three-fourths of them were under thirty years of age. A search through the records of my cases shows amputations done on individuals from ten to eighty years of age, and as stated above, only one of the fatal cases was past forty-five years of age. Age seems to have played very little part in contributing to the death rate. It has happened that none of my fatal cases belonged to the feminine gender.

Only one death followed amputation for diseased condition. That was a case of very large periosteal sarcoma of the upper part of the femur, which required amputation at the hip joint. The man refused to have amputation done until he was almost exhausted. He died on the third day after the operation, from exhaustion. His stomach refused to retain any food after the operation, and in his extremely weak condition rectal alimentation was not sufficient to support him.

It is shown by the foregoing statistics, that barring two cases of septicæmia, one of pneumonia, one of cerebritis, and one of delirium tremens—five altogether—all the fatal cases resulted from exhaustion following hemorrhage, and coincident injuries. The most common cause was hemorrhage. In order to make this apparent, and to emphasize the point I wish to make, I must divide my amputations into two series. These amputations were done in twelve years. My observation and study during the first part of this period convinced me that by far the majority of cases of crushes which were brought to the hospital were greatly reduced, in many cases moribund, from acute anæmia (from excessive hemorrhage), and I had been accustomed to operate before any sufficient time was given for the patient to recuperate. I reasoned, therefore, that if by any arrangement injured persons could be saved from excessive bleeding, and, in case of marked acute anæmia, if the operation be postponed for a period of hours in order to permit the patient to recuperate somewhat, results after amputations ought to be better. By far the greater number of injured persons brought to St. Luke's Hospital are transported over the Lehigh Valley Railroad. I had distributed along the railroad, at all the stations, on the wreck-cars, and on all the principal passenger trains, cases containing some simple antiseptic dressings, and especially two Esmarch elastic tourniquets. As surgeon-in-chief of the railroad, I had issued orders that in every case of serious injury, first aid, especially the stoppage of hemorrhage, should be accomplished by means of this apparatus. After this I also made it a rule to defer operating until a patient had thoroughly "reacted," if he was in a very weak condition when he arrived at the hospital. Results began at once to be better. The following statistics will show how much improvement there was. The apparatus has been in use, and the deferred operation method has been employed, during the last six years. The term of twelve years then ought to be divided into two periods of six years each. During the first period of six years there were 114 single major amputations and 9 deaths, giving a mortality-rate of 7.89 per cent. There were 9 cases admitted in hopeless conditions. In the last period of six years, during which the régime has been in operation, there were 180 single major amputations and 5 deaths—2.77 per cent. mortality. There were only four hopeless cases admitted. In the last period there were a larger number of operations, and the mortality-rate reduced almost one-third. Again, in the first series, having fewer cases, there were 9 hopeless cases ; in the last series there were only 4 hopeless cases, less than one half.

The double synchronous operations exhibit the difference in even a greater degree. There were altogether 38 double synchronous operations and 9 deaths, 23 68 per cent. mortality. In the first period there were 13 double operations and 6 deaths, 46.25 per cent. mortality. In the last period there were 25 double operations and 3 deaths, only 12 per cent. mortality. In the first period there were two triple synchronous operations, and both patients died. In the last period there were 5 triple synchronous operations and 2 deaths.

These statistics show 50 per cent. less mortality after amputations since the régime has been in operation. The argument seems to me incontrovertible. I urge, therefore, the saving of blood as the paramount necessity for recovery after major amputations, and in a line with this the immense importance of allowing an exsanguinated patient time to recuperate before attempting to amputate.

After-treatment and Result with Reference to Usefulness of Stump.—In forty-eight hours, usually, the stump is redressed for the first time, and the primary drain or packing is removed. If there has been oozing, or serum retained, then the drainage is continued; if not, all drains are removed and the flaps allowed to come together. After this a dressing once a week suffices. In a week the patient is usually out of bed. Of 100 cases analyzed with reference to this point (all cases for two and a half years taken), the average number of days in the hospital after amputation was 22.6.

There was one case of secondary hemorrhage—a dyscrasic individual; oozed most extraordinarily in spite of the greatest care, and finally a ligature gave way and the stump had to be reopened, clots turned out, and the vessel, a muscular branch of the popliteal, retied. This occurred after an amputation at the knee-joint. The man made a good recovery.

It has been quite impossible to keep track of all cases operated upon. So far, however, I know of only four cases requiring re-amputation. Three of these were in young boys, two having amputations through upper part of the femur and one through upper part of the humerus; developed conical stumps, and exsection of the end of the bone was necessary afterward. The fourth was done for necrosis developing in a compound fractured humerus after an amputation had been done lower down. It was necessary to re-amputate above the fracture. All the cases, as far as I have been able to find out, were able to wear false limbs comfortably, except one case of double amputation. This man's stumps looked typically healthy and well formed, but he said the constriction of false limbs caused him so much discomfort that he preferred to go about without the prothetic assistance. He was quite comfortable when not wearing the false limbs.

Mortality rate after Amputations.—Aseptic practice and the saving of blood during operation, have revolutionized the mortality statistics after amputations. Schede quotes Billroth as having said, with aseptic practice and Esmarch tourniquet, a surgeon should consider himself at fault if he loses a case of uncomplicated amputation, if the patient dies after he recovers from the immediate effect of the operation (writer's paraphrase). In other words, nowadays no patient should die after an amputation, unless he dies from the immediate traumatic effect of the injury or operation. I would go further and say, if a thoroughly bloodless method be pursued, and the operation be not done during the non tolerant stage of acute anæmia, statistics after major amputations ought to be as good as those of abdominal sections, and I believe they will finally be so.

The following statistics are far from complete, and are indeed meagre, but they will serve to indicate a comparison of results which I wish to urge in favor of the methods I have advocated.

Schede[1] gives 321 uncomplicated cases of amputations done after the Lister method of operation, and after-treatment by Socin, Volkmann, and himself (Schede), with a death-rate of 4 4 per cent. Of complicated cases, some requiring double operations and others having multiple injuries, there were 24, and 11 deaths—over forty-four per cent. mortality.[2]

Messrs. C. F. Dent and W. C. Bull[3] give the statistics of St. George's Hospital from October, 1874, to June, 1888, 400 major amputations, and an average mortality of twenty-one per cent.

Mr. A. E. Barker[4] performed 50 major amputations at University College Hospital, from 1876 to 1892—29 for disease and 21 for injury—with an average mortality-rate of eight per cent.

Mr. Frederick Page[5] gives 687 major amputations performed at the Royal Infirmary, Newcastle-on-Tyne, from April 1, 1878, to December 31, 1891, including 22 hip-joint amputations, with general mortality of eight per cent.; 272 amputations for injury, with 12.9 per cent. mortality; and 415 amputations for disease, with 4 8 per cent. mortality.

Dr. A. G. Gerster[1] gives a collection of 43 cases of his own, done mostly in hospitals, with a general mortality-rate of 4.65 per cent.

Ashhurst, in the 1893 edition of his "System of Surgery," gives the following statistics:

MAJOR AMPUTATIONS.

For Diseases.	Mortality.	*For Injuries.*	Mortality.
French hospitals.....	42.87	French hospitals.....	57.98
English hospitals.....	22.67	English hospitals.....	40.98
American hospitals.....	18.60	American hospitals.....	31.95

Wölfler[2] collects 704 uncomplicated amputations done by v. Bruns, Volkmann, Busch, Esmarch, Hunter, and Schede; the general mortality-rate was 15 6 per cent. He gives also v. Bruns's amputations from October, 1878, to October, 1880, 47 cases and no deaths. Also, Busch, 1873–1876, 57 cases, with 3.5 per cent. mortality. Billroth's Klinik, 1877–1880, 68 cases, 5.88 per cent. mortality.

Oberst[3] gives R. Volkmann's amputations at his Klinik in Halle, from 1874 to 1880. There were 73 uncomplicated amputations for injuries, and 10.5 per cent. mortality; 188 amputations for disease, with 3.7 per cent. mortality—a general mortality-rate of 5.3 per cent. Three hip-joint amputations done for injury, all died; 8 hip-joint amputations done for disease, twenty five per cent. mortality. There were 8 double amputations for injury, 3 deaths, and 5 double amputations for disease, no death; 13 cases, and general mortality twenty-three per cent.

My own statistics show, for the whole number of single major amputations, 294, with only 19 of them done for disease, and including seven hip-joint amputations, a general mortality-rate of 4.76 per cent. This is but a little higher than Schede's uncomplicated cases. Taking out the 19 done for disease with 1 death, there were 275 amputations for injuries and 13 deaths, 4.73 per cent.; and in nearly every case there were multiple injuries. Taking the last period, however, of six years, when the cases were exactly of the same character as before, but when hemorrhage was prevented, and when the operation was deferred until the condition of acute anæmia was somewhat relieved, there were during this period 180 single major amputations and only 5 deaths, or 2.77 per cent. mortality; these figures include six hip-joint amputations. This is the lowest mortality-rate I have ever seen reported for a series of 180 major amputations.

The multiple operations and extremely complicated injuries, in 26 cases, resulted in three deaths, 11.5 per cent. mortality. This is a small series of cases—these last—but the mortality-rate is less than the single operations in Ashhurst's statistics.

In conclusion, I beg to say these statistics speak far more impressively and eloquently than I could possibly do for the saving of blood and the conservation of strength.

Hospital Patients Poisoned.—An attempt was made recently to poison the inmates of a hospital in California by putting strychnine into the coffee. Twenty-two patients were poisoned and one man died. The wife of the superintendent was taken sick, but her life was saved. The coffee-pot was examined and traces of the poison were found in it. It is supposed that the work was done by a Chinaman who had trouble with the steward and had been discharged. He had made threats, and it is supposed that he took this means of venting his malice on the inmates.

[1] Pitha und Billroth: Handbuch der Allgemeinen und speciellen Chirurgie, Zweiter Band, Zweite Abtheilung, p. 238.
[2] Vide ibid., pp. 240 and 242. [3] Lancet, June 14, 1890, p. 1303.
[4] Lancet, January 2, 1892, p. 22.
[5] Ibid., March 5, 1892, p. 523.

[1] Aseptic and Antiseptic Surgery, p. 60.
[2] Die Amputationen an Prof. Billroth's Klinik, 1877-1880, Dr. Anton Wölfler, 1882.
[3] Die Amputationen unter dem Einflusse der antiseptischen Behandlung, Dr. M. Oberst, 1882.

TUBERCULOSIS OF THE ADRENAL BODIES UNACCOMPANIED BY BRONZING.

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THE value of this case depends upon the extent and chronicity of the lesion, and upon the fact that adrenal disease was not suspected during life.

The patient was a Danish sailor, thirty six years of age. He entered Bellevue from the Chambers Street Hospital as a case of constipation. Death took place about three weeks later, without any assignable cause. During his stay in the hospital, he attracted attention only as a case of obstinate constipation with marked inanition. The man spoke English imperfectly, and no interpreter could be found. Consequently nothing is known of his previous history, and the history of his last illness is incomplete.

There was marked asthenia without any apparent reason for it. On one occasion an attempt was made to get the patient out of bed, but it had to be abandoned because he complained so much of weakness. There is no mention of any attendant syncope.

He ran a temperature, but the range was low; it not rising at any time above 101° F. The heart action was feeble, and the surface of the body generally gave evidence of a poor circulation. The pulse-rate varied from 72 to 88.

The constipation continued, in spite of vigorous treatment, up to the time of his death. There is no record of an alternating diarrhœa. No vomiting or nausea was present during his stay in the hospital.

He manifested certain derangements of the nervous system The reflexes were much exaggerated; sensation was delayed; and during the last few days of life he became delirious, attempting several times to get out of bed.

At the autopsy the body was found anæmic, but not much emaciated. The heart weighs nine ounces, and its walls are pale. The valves are normal. The right lung is bound to the chest wall by a few old stringy adhesions. The upper lobe contains several tubercular masses of considerable size (1.5 ctm. in diameter), in a state of caseation, while throughout the middle and lower lobes a few small nodules are found. The pleura is adherent to the chest-wall over the apex of the left lung, and there is a large area of tubercular infiltration in the upper lobe which has undergone caseation. The rest of the upper lobe is studded with miliary tubercles. The lower lobe contains a few tubercles in its substance and on the pleura. The bronchial glands are enlarged and are cheesy at the centre.

The left adrenal body weighs an ounce and a half. Its original shape has been lost entirely, it being irregularly oval and somewhat flattened antero-posteriorly. On section it is found to be caseous, and a greenish-yellow pus exudes from several points on the cut surface. All trace of medulla or cortex has disappeared. The cheesy matter has become calcareous at many points. The capsule of the organ is much thickened. The right adrenal weighs only one half ounce, and has contracted down to about one-half the size of the normal gland. It is similar in shape to the left, and contains one large calcareous mass with numerous smaller ones scattered through its substance. Both glands are somewhat nodulated.

The process, as far as the adrenals are concerned, began in the right gland.

The other details of the autopsy are unimportant as regards the present report. Unfortunately, the semi-lunar ganglia and abdominal sympathetic nerves were not removed for examination.

Microscopic Examination.—The left adrenal only was submitted to examination, the right being too calcareous to permit the cutting of sections. The gland tissue has been replaced by amorphous masses showing only the remains of the nodules which originally characterized the process. No trace of a medullary or cortical cell can be found. In the outer portions of the gland, immediately under the capsule and between the nodules, a faint fibrillar structure may be seen with round cells, many of them dead or abortive, filling the interspaces. The appearance is distinctly different from a true inflammatory process. No giant cells are anywhere present, a fact which has been noticed in many cases. The capsule is much thickened and is the seat of inflammatory foci. The inflammation has extended beyond the capsule into the adjacent fat. Two moderately large caseous masses lie in the capsule, and appear entirely distinct from the inflammatory process. The capsule contains numerous small round cells and young connective-tissue cells.

The glands were not examined for tubercle bacilli while fresh, as it was intended to stain for them afterward in the sections. The difficulty, however, experienced in cutting the sections thin forced me to resort to another procedure. I thoroughly scraped the cut surfaces of the hardened gland, dissolved the scrapings in a dilute solution of liquor potassæ, fixed the sediment to slides with the ordinary albumin fixative, and after several attempts found the bacilli. Hence there can be no doubt as to the nature of the process.

The integument and buccal mucous membrane were carefully examined for evidences of discoloration without finding any but the normal pigment deposits.

No sufficient cause for death, aside from the condition of the adrenals, was found at the autopsy.

It is impossible to fix upon the duration of the illness, because the history is so incomplete. The Chambers Street Hospital is merely a reception hospital for medical cases, so the patient was transferred to Bellevue after a few days.

The most important conclusion to be drawn from this case is, that tuberculosis of the adrenal bodies, *per se*, though both glands be entirely destroyed, is not productive of skin discoloration.

According to Wilks,[1] "we have no data by which to determine the time necessary for the deterioration of the capsules. It is probable that this is very lengthened, and judging from the cretaceous deposit, it is fair to conjecture that the disease is extended over many years."

There can hardly be any question as to the seat of primary infection in this case. The appearances presented by the adrenal bodies leave no doubt that they became involved prior to the lungs or bronchial glands. Whether the disease in the latter situations was secondary to that in the adrenals, or whether the infection was primary from without, is an open question.

I have examined systematically the adrenal bodies in all the autopsies I have performed at Bellevue Hospital during the last two years, and this is the first instance in which I have found them to be tuberculous, though many of the cases have shown extensive tuberculosis in other parts of the body.

In conclusion, I wish to express my thanks to Dr. E. S. Farrington, formerly house physician on the fourth medical division of Bellevue, and to Dr. F. F. Russell, his junior, for the kindly interest they took in furnishing me with such facts in the case as were at their disposal, and the notes of the autopsy.

5 WEST THIRTIETH STREET.

A State Medical Law in Idaho.—At the session of the Idaho State Medical Society, held in September, the question of a State Board of Examiners was discussed, and a resolution passed urging the legislature to appoint such a board during the coming winter. A committee was appointed to draw up a bill for a medical practice act, after the model of that in force in Washington. Drs. Sweet, Watkins, Moore, Maxey, and Fairchild were nominated to represent the Society upon this board when created.

[1] Reynolds's System of Medicine, Article Addison's Disease.

TUBERCULOSIS OF THE FRONTAL SINUS.

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AND

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Diseases of the frontal sinuses are of interest on account of their infrequent occurrence. In the past fifteen years there have been ninety-five cases reported, the analysis of which will follow.

Family history of the patient: The father, who is sixty-eight years of age, was not expected to live when thirty-three, physicians having diagnosed his case as pulmonary tuberculosis. The mother is fifty-eight years of age, and in good health. Two brothers; one of them well, the other had, about five years ago, some lung trouble; diagnosis of same not known. Two cousins died of tuberculosis.

Patient's history: Twenty-eight years of age, married, 5 feet 8 inches tall, and weighs 160 pounds. Has always been in fairly good health up to a year ago, when he began to lose in weight, had severe headaches, lasting for a day or two, recurring every week, the intervals being entirely free from any ill feeling. He continued in this way for three months, when he complained of the pressure of his hat across the forehead; he would frequently tilt his hat back and thereby gain relief. Three months later he consulted a physician for some growth on the left side of the forehead, which lasted three weeks. At about the same time the patient noticed a swelling in the region of the right frontal sinus, which caused him incessant pain. Hot fomentations, nasal douches, and anodynes were given, with no apparent relief. On the morning of June 16th, the patient noticed that his right eye was partially closed, and the upper lid was inflamed and painful. Dr. Frank was then requested to see the patient, who found, in addition to the above-mentioned facts, that the right eye was pushed downward to a slight extent; vision was not impaired. On outer right side of nose there was a faint blush creeping gradually toward the inner canthus, and mingling there with the redness of upper lid. The patient had a temperature of 100½° F.; pulse, 96. Kidneys and heart, negative; fingers are clubbed. About meatus urinaris, a tubercular ulcer was found, which healed promptly upon application of europhen. The lungs on auscultation revealed vesiculo-bronchial breathing; rhinoscopic examination gave negative results. A mild anodyne was given, and the patient was kept under observation. Four days later he was again examined, and in palpating the upper lid a fluctuating mass was discovered in the region of the lachrymal gland. Temperature was 100° F.; pulse, 96. Operation was advised, and on June 26th was performed in the presence of Drs. Verity and Edmunds, and assisted by Dr. S. Kunz. A curved incision was made, starting about half an inch to the left of the glabella, and extending to a point half an inch posterior to the external angular process, the incision being made down to the bone and one-fourth of an inch above the eyebrow. The pericranium was found thickened, the tissues having been pushed back, and the bone over frontal sinus being roughened. The sinus was opened with a hammer and chisel, and in the sinus there was found a yellowish cheesy mass, which was removed with a sharp spoon. On the posterior wall of the sinus there was found a focus, which had almost gained access to the vault. This focus was removed by the sharp spoon, and a small portion of the dura was all but exposed. At the right lower angle of the sinus, a small channel was found, which, upon being followed out, led the way to the fluctuating mass in the upper lid. The tissues now being pushed over the supraorbital arch, the fluctuating mass was reached, and was found to be about one drachm of yellowish pus, coming from the frontal sinus by means of a small channel on the inner surface of the frontal bone already described. The supraorbital arch was found diseased throughout its entire extent; four foci were found, which had undergone cheesy degeneration. The entire arch was chiselled away, the soft tissues being thoroughly scooped; the right nasal cavity was also scooped out through the frontal sinus by means of a small spoon. The sinus was packed with iodoform gauze, extending into the right nasal cavity, and the wound sewed up with interrupted silk sutures.

The wound was entirely healed on the eighth day, with the exception, of course, of the part immediately above the sinus. The air sinus lasted to the eighteenth day, when it also closed up. The patient felt free from pain from the day of the operation, and his temperature was normal after the first day of operation.

Anatomy of the Frontal Sinuses.—The frontal bump, as it is termed, does not exist in childhood, as the tables of the frontal bone do not separate until after puberty. Absence of the bump, even in middle age, does not necessarily imply absence of the sinus, since it may be formed by a retrocession of the inner wall of the skull. An adult, especially an elderly person, may have a large frontal sinus, without any external indication of it. A very prominent bump does not necessarily imply the existence of a large sinus, or even a small one. The bump may be a mere heaping up of bone, a degradation, as is often found in Australian skulls.

The cavities are larger in men than in women, the left being commonly the larger. They are lined by mucous membrane, and communicate with the nose by the infundibulum and occasionally with each other by apertures in their septum.

In the ninety-five cases reported, we find the following etiological factors: Mucocele, 24 cases; abscess, 51, 3 of them being double; fracture, 1; foreign body, 1; injury, 1; exostosis, 1; osteoma, 7; tumors, 3; cholesteatoma, 1; polypi, 2; periostitis, 1; cyst, 2.

In the cases reported as mucoceles, is it not possible that some of them at least were of tubercular origin? Had the contents of the sinuses been examined for bacilli, tuberculosis of the frontal sinus would be more often heard of.

Through the kindness of Dr. T. Gramm, the bone chips from the arch were examined for bacilli, the cheesy masses and foci having been accidentally lost; although no bacilli were found there seems to be no doubt about the diagnosis, from the character of the cheesy masses found in the sinus, from the cheesy foci in the bone, from the yellowish pus found in the cellular tissue of upper eyelid, and from the history of patient.

The various methods of operation are about the same, with the exception of the drainage, vulcanite rubber or soft rubber being used oftenest, but where these were used the air sinus remained for a long time, some even necessitating a plastic operation for their closure, the average length of time of duration of air sinus being about eight weeks.

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CHOLECYSTOTOMY AND CHOLECYSTECTOMY FOR STONE IMPACTED IN THE CYSTIC DUCT.

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THE two following cases seem of sufficient rarity and interest to be placed on record, for in a somewhat extensive experience in the surgery of the gall-bladder the writer has seen only those in which the symptoms depended upon the impaction of a single large stone in the cystic duct, and in which the diagnosis was so obscure that movable kidney was supposed to be present by several diagnosticians. In both cases the distended gall-bladder, which could be felt through the abdominal wall, was so tense and so movable as to suggest very strongly a floating kidney. In one case the symptoms were caused by a large stone, the removal of which, owing to its long and firm impaction in the cystic duct, was accomplished only by complete extirpation of the gall-bladder and cystic duct. In the other the stone was detached, after prolonged efforts, through the gall-bladder itself. In both cases a very gratifying recovery followed.

CASE I.—Tumor in the right side of the abdomen suggesting movable kidney; absence of pain and of other symptoms of biliary obstruction; tumor found to be dilated gall bladder, with large stone impacted in the cystic duct; cholecystotomy; cholecystectomy; recovery.

Mrs. W. C——, aged thirty-two, was admitted to the Massachusetts General Hospital on June 9, 1894. She was brought to me on May 10, 1894, by Dr. Zatæ Longsdorff-Straw, of Manchester, N. H., with the following history. Has had five children, the youngest aged three and a half. She was well up to a year and a half ago, when slight irregularities in menstruation began. With each period there was pain and tenderness, suggesting a mild localized peritonitis. During the past year there have been three severe attacks of what seemed to be a localized peritonitis with symptoms referred at one time to the right, at others to the left hypochondrium. In one of these attacks there was general distention and tenderness. In December, 1883, Dr. Straw discovered a kidney shaped tumor, somewhat movable, in the right side of the abdomen at the level of the umbilicus. The tumor was supposed to be a movable kidney. No surgical interference seemed advisable. During the next few months there was a rapid increase in the size of the tumor; it grew more tender and more movable, at one time extending toward the right groin. The idea of a tubal pregnancy was for a moment entertained. The mobility was so great that the tumor could be pushed well over to the left side of the abdomen. No constitutional disturbance complicated the condition, though there was marked local pain and soreness. There had been some loss of weight.

I found a small oval, tender, non-fluctuating tumor in the right side, under the liver, at the normal position of the gall-bladder. At first it seemed very evidently a movable kidney. Under prolonged and repeated examinations the fundus of the tumor was found to move in the arc of a circle about the attachments of the gall-bladder.

In this case the question of movable kidney was first considered. With the patient in dorsal decubitus a movable tumor could be felt in the right renal region. It could be grasped between the hands on deep inspiration, slipping upward apparently into the usual position of the kidney on loosening the digital grasp. The slight force necessary to retain the tumor between the fingers caused some complaint of pain. In the erect posture nothing could be felt. The urine was normal. Repeated examinations showed that the tumor could be moved in all directions about the normal position of the gall-bladder. This kind of mobility, differing materially from that of a movable kidney, suggested strongly a dilated gall-bladder, especially since the other physical characteristics were not incompatible with the latter condition. The absence of jaundice did not vitiate the diagnosis of obstruction to the cystic duct, nor did the normal urine preclude the possibility of movable kidney. Perhaps the strongest sign in favor of the gall-bladder as the seat of the disease was the direction in which the tumor could be moved. In a slightly movable kidney the only variation in position that can be detected is the downward dislocation. If the kidney can be moved into the epigastrium its downward displacement will be found excessive. In gall-bladder dilatation, on the contrary, the fundus will be found no farther from the centre of attachment in one direction than in another. That the kidney should wander farther in the downward direction than in the upward is natural, considering the viscera which hinder upward displacement. In the shape and size of the tumor, too, there are points of difference, though they may not be always present. An oval shape, smooth and uniform walls, absence of hilum, etc., favors the gall bladder. In spite of every precaution, however, it will be found at times difficult to distinguish between the two conditions, and preparations must be made to meet both at operation.

The diagnosis was made of an obstruction in the cystic duct. On opening the abdomen in the right linea semilunaris, over the tumor, a very large gall bladder, distended almost to bursting, was found. The contents were removed by aspiration until the lax and distended walls of the gall-bladder were easily delivered through the wound. The cause of the trouble was found to be a large stone impacted in the cystic duct. The fluid in the gall-bladder was perfectly colorless, the biliary pigments having been absorbed, as is usual in cases of long-continued obstruction at the cystic duct with dilatation of the gall-bladder. With one finger of the right hand

in the gall-bladder, and with the fingers of the left outside the duct, prolonged efforts were made to dislodge the stone. This proved impossible, however, although the calculus could be plainly felt both inside and outside. I was therefore finally obliged to lay open the duct and to detach the stone through the wound. The roughened surface of the calculus was so intimately connected with the changed structures of the duct that it was even then hard to lift the stone from its bed. It seemed best, therefore, in view of the great laceration of the parts, to remove the gall-bladder and duct entirely. This was done by passing a ligature about the duct just below the incision through which the stone had been removed. A small gauze drain was placed next the ligature and the external wound was closed, except for about an inch. This patient made a rapid recovery, and was discharged on July 21, 1894.

Case II.—Paroxysmal pain in the hepatic region, without jaundice, for three years; tumor; cholecystotomy; removal of great numbers of stones from the gall-bladder, with one large stone impacted in the cystic duct; drainage; recovery.

Mrs. S. B. M——, aged twenty-five, trained nurse for Dr. Donnel Hughes, of Philadelphia, who was present at the operation. Examined on July 13, 1894. First suffered from cramps in the stomach three years ago. They were transitory and seemed of little importance. At first the attacks of pain returned at intervals of several months, but within the last six they have occurred frequently — often seven times in two weeks. When suffering from the pain, which is always located in the right side, the patient is doubled up; relief has been obtained only by the use of morphine. After the cessation of this distress or agony there is a transient soreness which extends into the back. There has never been any jaundice. The exact region of the gall-bladder was indicated as the seat of pain.

On examination I found on the right side below the margin of the ribs and opposite the cartilages of the ninth and tenth, a tumor oval in shape, hard, tense, unfluctuating, movable, and tender. From physical examination alone it would have been impossible to distinguish between a tumor of the gall-bladder and one of the kidney if it had not been for the two following facts: first, the presenting rounded extremity of the tumor moved through the arc of a circle, the base of which was somewhere near the usual attachments of the cystic duct; secondly, the urine was perfectly normal.

The pain, described as transitory and resembling colic, was quite as suggestive of renal as of cholecystic disease. The peculiar kind of mobility was not incompatible with a floating kidney, although it seemed to me more like the mobility of a dilated gall-bladder than like that of a movable kidney.

The patient was advised to submit to operation, and she entered St. Margaret's on July 29, 1894. Under ether we obtained a much more satisfactory examination, by which almost all doubts as to the nature of the disease were dispelled. It was very evident that the tumor was a gall-bladder and not a kidney.

Assisted by Dr. Brewster, I began the operation by a small incision at the cartilaginous border of the ninth rib, along the outer border of the rectus abdominis. The tumor immediately presented itself in the wound, with the sharp edge of the great lobe of the liver, and it proved to be the gall-bladder. Its walls were tense and very much thickened. The presenting extremity was sewed into the small abdominal wound, and the gall-bladder was opened. A large number of gall-stones of all sizes, with a clear, viscid fluid, were washed out. The state of distention, with the altered character of the fluid, made it very evident that there was an impediment in the cystic duct, though no stone had been removed large enough to cause so firm and so effective an obstruction. Nothing could be felt in the cystic duct, with the finger in the gall-bladder. The parts were carefully dried by means of aseptic gauze, and the stitches by which the gall-bladder had been attached to the abdominal wound were removed. Explorations with the finger in the peritoneal cavity then revealed a large stone deep down in the cystic, near the common duct. By bimanual palpation the stone was slowly and with difficulty started from its bed and delivered through the gall bladder. Very soon after the removal of this stone the colored bile from the gall-bladder showed that the cystic duct was now patent. The gall-bladder was again stitched to the wound and drained by means of rubber tube and sterile gauze.

Though the prognosis seemed almost hopeless to some of those who were present, the patient made a rapid recovery, without a single unfavorable symptom. She was discharged well in three weeks, and on August 31, 1894, she wrote as follows: "I am getting along very, very nicely, and feel better than I have felt for years, and am gaining every day. I haven't an ache or a pain, and my side is entirely healed, and there is scarcely any soreness inside."

In these cases the diagnosis was interesting. The correctness depended more upon the situation and the kind of mobility than upon anything else in the physical examination or in the history. An interesting point in connection with these cases is the character of the fluid. In the first and only previous case in which I had noted this symptom[1] the gall-bladder contained about a quart of perfectly colorless, limpid fluid. Whether this fluid is decolorized bile or simply the accumulation of secretions from the mucous membrane I am unable to say. In view of the fact that in most cases of obstruction with jaundice the bile is thick and dark in color, it would seem that the presence of such fluid indicates a complete and protracted shutting off of the gall-bladder from the biliary passages. At all events, the existence of this symptom is a very clear indication that there is a complete obstruction in the cystic duct. With an obstruction in the cystic duct, however, it does not follow that there is not also an obstruction in the common duct. This combination was illustrated in the case of C. C. R——, above referred to, in which the disease proved to be cancer of the head of the pancreas extending into the region of the cystic duct, obstructing the latter as well as the common duct.

In operating upon a distended gall-bladder the subsequent manipulations are very much facilitated by aspiration. In both the cases reported it was very hard to feel the stones or to examine the cystic duct when the tumor first presented itself. On withdrawing a few ounces of fluid, the collapsed gall-bladder could be brought into and out of the wound with the greatest facility. The subsequent manipulations were, therefore, very easy and simple, even to the ligation of the cystic duct.

These cases, which perhaps in some respects may be deemed difficult, both as to diagnosis and as to surgical treatment, recovered without any untoward symptoms.

Operations upon the gall-bladder undertaken when the patient is in good health, before the obstruction has extended so as to check the escape of bile through the common duct, and before the patient's vitality has been impaired by prolonged illness, are followed by the most brilliant and gratifying results. Undertaken for prolonged jaundice, however, especially when it is necessary to remove from the common duct, a stone of the size, roughness, and fixity of that in Case I., these operations are inevitably attended by a very considerable mortality.[2] As in the removal of the vermiform appendix when there is neither local nor general peritoneal extravasation the mortality is practically nothing, so in operations upon the gall-bladder before the severity of the local condition requires the more formidable surgical manipulations, and before the long-continued impactions have resulted in the presence of pathogenic bacteria and the infection of the biliary passages, the results are gratifying in the extreme.

[1] Case I. C. C. R——, Boston Medical and Surgical Journal of April 28, 1892.

[2] Vide paper by J. W. Elliot in the Boston Medical and Surgical Journal.

The deplorable results in gall-bladder surgery which are sometimes unjustly placed at the door of the surgeon arise from our failure to heed the warning of the disease in its incipiency—in our neglect to remove the source of future disasters at a time when the procedure may be accomplished with very slight danger. Hence it seems to the surgeon folly, in cases of repeated and persistent biliary obstruction, to attempt the removal of gall stones by medicinal means. Sooner or later in most cases a stone gets impacted in one place or another. It grows, becomes rough, and not easily detachable, and finally, if it does not cause death by sudden rupture into the peritoneum, the grave symptoms to which it gives rise convince even the most conservative of the necessity of an operation—an operation which then must be done under the most unfavorable conditions, and with a prognosis infinitely graver than in the early days of the disease.

EPILEPSY—AT TIMES A BLADDER REFLEX.[1]

By HUGH K. AIKEN, M.D.,

LAURENS, S. C.

If you consult any work upon the subject of the "Causes of Epilepsy" the first statement you meet will be that heredity plays the most important part as a predisposing cause. Then follows the well-authenticated fact that peripheral irritation of various kinds will inaugurate and keep up the paroxysms. There is also a group of what we may call central or systemic causes producing the epilepsy that follows diphtheria, scarlet fever, malaria, tertiary syphilis, strong mental impressions, as excessive joy, grief, or anger. All these factors and others have by trustworthy observers been reported as first producing the disease. But most interesting of all the foregoing is the study of those cases in which epilepsy stands out clearly as a reflex, and while cases the result of reflex irritation from several organs have been recorded, the writer has never seen attention called to this particular reflex as a causative agent of any importance. The few cases to be cited would at least seem to prove that sometimes, when otherwise unable to account for the seizures, investigation in this locality might be successful and thus some light be shed upon what would else remain obscure.

There may be some who will regard as superfluous any further contribution to the literature of a disease of whose symptomatology we already know so much and whose etiology is so varied. But our treatment remains painfully deficient. The criticism of such readers reduced to few words is always "If you have not some new remedy to offer us, be silent." Such critics overlook the fact that the mastery of etiology is the first step to satisfactory therapy. Finding the cause and removing it is the ideal of scientific practice.

Reading a journal article recently on "Suprapubic Cystotomy," I was struck by the following, which I will call

Case I.—"A. M. W——, aged twenty-one. Ten years ago this patient was suddenly attacked with an urgent desire to urinate, which he could not explain. This irritation has persisted ever since. Three years after the onset of this attack he became subject to epileptic seizures, which would occur about once a month and in some manner seemed to be associated with his vesical trouble. . . . Since the latter has been relieved the convulsions have ceased."

This extract reminded me of a personal experience which constitutes

Case II.—Miss E. C——, aged thirty-eight, had been ill eighteen days with typhoid fever. I had, in a perfunctory manner, been examining the bladder daily and never found it distended. In the middle of the night I was hastily summoned, and informed that my patient was having convulsions. She had two after I reached her. Briefly described they were as follows: Coincident with a momentary loss of consciousness a wave of muscular spasm would pass over her, and then in an anxious tone she would ask, "Doctor, what is the matter with me?" I was puzzled. Groping about to find a cause, I felt over the bladder region and found the organ full. The catheter was used at once. She had no more convulsions, nor has she had any since. No antispasmodics were given.

What were these epileptic explosions if not the result of irritation of the hypogastric or sacral plexus?

Case III.—Muscroft reports a case of stone in the bladder which gave rise to epilepsy and a cure followed its removal.[1]

If phymosis causes infantile paralysis, may not irritation of the vesical nerves give rise to epileptic seizures? I do not lay claim to any great discovery in connection with the cause of epilepsy, and only record my limited observations as a working hypothesis by means of which something more valuable may perhaps be brought out. The modesty and diffidence with which I would advance this view will, I hope, save me from the rapacity of those fierce critics who delight to prick each little balloon labelled "Theory" just to see the gas escape.

If occasionally epilepsy be due to irritation about the bladder, this fact should be borne in mind, and this is all I would insist upon. I feel ashamed of our boasted advances in therapeutics every time a case applies for treatment. Every unrelieved sufferer from this disease is a reproach to our profession, and if we are ever to cure the morbid condition the energies wasted in the search for some new compound that will act as a specific must be diverted and applied to finding the cause at work in each case as it comes to us. In long-standing cases the best I have ever been able to do is to lessen the severity and decrease the frequency of the attacks by the use of sodium bromide, and while this is given in the smallest dose that will accomplish the purpose, even then I am deranging my patient's stomach and impoverishing his blood by the forced ingestion of an excess of alkali.

Trephining has not achieved the results at first expected from it. The cicatricial mementos of youthful exploits have been carefully excised and buttons of bone removed. At first, he who was before "possessed of a devil" went his way and perhaps sinned no more, but after one or two years the insidious petit mal returned.

Some hold that an operation of any sort upon an epileptic produces a temporary improvement in his disease. Tincture of horse-nettle will do very well to sell at three dollars per pint, as an enterprising (?) practitioner in Indiana advises me he is willing to do, but I have never seen any considerable number of cures to its credit. The profession would, no doubt, appreciate any further evidence in its favor from Dr. Napier, of Blenheim, S. C., who first called attention to this agent as a remedy. We are all too prone to prescribe a palliative and dismiss these unfortunates with the reflection that it is a case of idiopathic epilepsy and beyond the reach of curative effort. If we would associate the ideas of irritation and epilepsy, and search diligently for a cause in every case, removing it, where possible, the number of idiopathic and inexplicable cases of epilepsy would be reduced. There is irritation somewhere and somehow brought about but not always connected with a scar. Having seen the explosion, work back, following the fuse until we reach its beginning. There sit and watch until you see what it is that applies the spark, reasoning backward from effect to cause.

[1] Read before the Laurens County Medical Society, July 24, 1894.

Dr. Sathianadhan, the first and only native woman novelist in India, died recently at the age of thirty-one. Her parents were Marathi Brahmans; she herself was a Christian and the first woman to study medicine at the University of Madras. Her first book was entitled "Saguna," a picture of a high-caste girl's home life; another, called "Kamala," has just been published.

[1] Wood's Reference Handbook, vol. ii., p. 706.

THE MANAGEMENT OF VALVULAR HEART DISEASE, WITH PARTICULAR REFERENCE TO THE USE OF STRYCHNINE.

By L. HARRISON METTLER, A.M., M.D.,

CHICAGO, ILL.

VALVULAR diseases of the heart all require about the same line of treatment. So long as compensation is complete and the accompanying hypertrophy or dilatation does not give rise to any very marked secondary symptoms, medicines should be withheld entirely, and none but general instructions given in regard to rest, diet, and hygiene. I do not deem it wise, as some authors do, to inform the patient, at this stage of his trouble, of the seriousness of his condition. The effect is apt to be depressing, and therefore deleterious, whereas no immediate benefit is to be obtained. From the treatment and instructions given he will soon enough suspect the nature of his malady, and the hope born of uncertainty will induce him to follow directions more closely than the despair awakened by a gloomy prognosis. I make it a rule always to inform the family. If, at the solicitation of the family and the patient himself, I am obliged to tell him the real state of his condition, I do so most guardedly, making the prognosis as reasonably hopeful as possible, but not belittling in one iota the nature of the cardiac lesion. Only in this way is confidence established, and in certain cases a foundation laid for the proper observance of the treatment deemed necessary.

Of the first importance is rest. Nothing so recuperates a tired heart as absolute rest. This does not mean merely to lie down whenever the feeling of exhaustion is experienced, but to keep regular hours in regard to rising and retiring; to regulate the daily exercise so that it falls short of producing weariness; to adopt the proper kind as well as amount of exercise; and to furnish the mind with congenial entertainment. A man may declare that he gets abundant exercise by walking in the open air all day in connection with his business. There is neither pleasure nor variety in that sort. An hour's stroll over the rolling ground of a park in company with a congenial friend, with mind free from business cares, will do more than a day of the former kind of exercise. Gymnasia are to be very cautiously recommended, for they are frequently badly ventilated, and competition with the other attendants is liable to lead to over-exertion. Any form of out-door sport may be approved of so long as no sudden or violent movements are required by it. The stomach must never be overloaded, and the nutrition must be kept at its maximum; hence frequent small meals rather than heavy dinners are to be commended. Fats, sugars, and succulent vegetables are to be indulged in very sparingly. The nitrogeneous, albuminous foods are the best. As a rule, I find that patients do better when they take as little fluid into the system as possible, and abstain entirely from all kinds of stimulating drinks. The following case illustrates the benefit derived from the observance of general treatment alone:

CASE I. *Mitral Regurgitation.*—J. P——, boy, twelve and a half years of age. Family history excellent. Has had none of the severe diseases to which all children are liable. Three years before he first came to me, June 24, 1893, he had his first attack of acute inflammatory rheumatism. The ankles, wrists, and other joints were successively swollen, painful, and immovable. The mother says she treated the child herself, chiefly with external applications. Every succeeding winter he seems to have had similar attacks, in some of which medical attendance was engaged. Immediately after his first attack his heart began to trouble him. At any time, most frequently at night, so as to arouse him out of his sleep, he will experience a sharp, intolerable, lancinating pain about the region of the heart, but never down the left arm. Sometimes this pain lasts half an hour, disappearing as suddenly as it comes. At the same time pains start up all over the body, chiefly in the neighborhood of the joints. These pains are of an aching character. The heart then beats laboriously and violently, so that he feels as though "it would beat out of his body entirely." He suffers continuously from a slight headache. For the last three years he has not been able to lie on his left side without bringing on an attack of cardiac pain and shortness of breath. There seems to be no dyspnœa under other circumstances. Respiration and digestion are as yet unaffected. Appetite is ravenous and bowels move regularly. Micturition is normal. Urine is pale yellow, feebly acid, specific gravity 1.028, with an excess of urates and earthy phosphates, no albumin, no sugar. The pendent parts of the body, such as the lower abdomen, are slightly erythematous. Passing the finger-nail firmly over the skin produces a white streak which slowly disappears before the returning redness. The feet are at all times slightly swollen and cyanosed. When the hands are allowed to hang down for some time they also become slightly swollen and congested. Hearing and eyesight are good, and there is no congestion of the conjunctivæ. He is very regular in all his habits, but has been indulging in violent exercise, such as base-ball, and drinking freely of tea and coffee. By a former physician his family was told that "something was growing over the heart." Upon inspection I found the left side of the chest decidedly larger than the right, and the intercostal spaces less distinctly marked. The area of cardiac dulness was considerably increased and the apex-beat of the heart remarkably pronounced. One could see it thumping against the thoracic wall like a caged creature striving to get free. Palpation revealed an irregularly acting, throbbing, violently beating heart. The pulsations were jerky and apparently performed with much effort. Upon careful auscultation I could distinguish nothing abnormal in the action of the tricuspid and semilunar valves, but the sound of the mitral valve, heard most distinctly near the apex of the heart, consisted of a coarse, grating, troubled murmur. It resembled a churning noise occurring synchronously with each systole. The second sound of the heart was sufficiently accentuated. The radial, femoral, and temporal pulse were all feeble and irregular. It would have been an unnecessary cruelty to have told this young lad the real state of his condition and its probable termination, though the parents were fully advised of the same. He was a sensible boy, and having won his confidence I had no difficulty in getting him to follow my instructions. As soon as he began to moderate his exercise, to study and lead a more sedentary life, to avoid all stimulants absolutely, and to live upon a plain, nutritious, dry diet, the cardiac pain diminished and left him almost entirely, the heart's action became steadier, and he lost his former expression of distress and anxiety. No medicines whatever were given, and up to the last time I saw him he was still doing well.

When, as a result of beginning failure of the compensatory hypertrophy of the heart with over-dilatation, attacks of dyspnœa and vertigo become troublesome, and other secondary symptoms begin to make their appearance, I find that strychnine in small and frequent doses steadies the heart's action in the happiest manner. The appropriate general tonic treatment with iron, arsenic, and vegetable bitters must not be neglected, but used in conjunction with the strychnine. Sometimes I have seen the strychnine assisted most materially by the so-called heart tonics, such as digitalis, strophanthus, and convallaria. The following case, kindly referred to me by Dr. Henry M. Lyman, illustrates what has just been said:

CASE II. *Mitral Regurgitation.*—Mrs. S. D——, aged about fifty-seven; mother of several living children. Family history good. Prior to marriage and in early life health was excellent. Never had any prolonged severe illness, but has suffered a number of attacks of acute and subacute rheumatism. At present there is general weakness, præcordial distress, nervous irritability, and some emaciation. Patient suspects heart trouble, but has never been told (fortunately, I believe) the seriousness of her condition. There is a

slight cough with occasional attacks of dyspnœa. Digestion is troublesome; tongue clean and red; bowels irregular. There is a constant tendency to diarrhœa. Constipation sometimes causes much distress. Vertigo with slight headache is not uncommon. The liver is enlarged and jaundice occasionally makes its appearance. The action of the kidneys is as yet but little affected. The hypostatic condition of the lungs produces shortness of breath and favors attacks of capillary bronchitis. Of these attacks she has now had several. The last while under my care, and from which she is now convalescing, was the severest she ever experienced. The cough was incessant, hard, and racking. Fever was high; pulse small and rapid. There was pain in the chest, extreme shortness of breath, and loud râles heard both anteriorly and posteriorly. Complete heart failure seemed imminent a number of times, a disaster which was only averted by the free use of hot poulticing and stimulation, together with the administration of such cardiac tonics as ammonia, digitalis, strophanthus, and convallaria. For the happy outcome of this attack not a little credit is due a good, careful nurse. The patient suffers occasionally from hysterical melancholia, for which the valerianate of ammonia is given. When convalescence began, the patient having been several weeks in bed with the present attack, I began using the tincture of nux vomica, but soon changed to strychnine and general ferruginous tonics. Almost immediately the improvement became pronounced and rapid. The cough diminished, the pulse grew stronger, the heart beat more steadily, the nervous excitement and distress were greatly allayed, and the appetite and digestion increased. Only small doses of the strychnine were employed, such as $\frac{1}{50}$ to $\frac{1}{60}$ grain three or four times a day. Soon I dispensed entirely with the digitalis, strophanthus, and convallaria, and depended upon the strychnine alone. When the patient began to go about the house she was advised to take maltine, with strychnine, quinine, and iron, which has continued to act as a most efficient tonic. She is now able to attend to her household duties, and is as well as could be expected with her heart trouble. Having tried many remedies and travelled both in Europe and California in search of health, she is naturally overjoyed at having found something that gives her greater comfort than she had yet experienced. She has gained somewhat in weight, is less nervous, and, as her friends tell her, looks better. I attribute the result chiefly to the strychnine, as I have seen it act similarly in other cases. Of course all these heart cases sooner or later fail to respond to any medicine or plan of treatment; the end is then close at hand.

In the text-books and general literature I find very little reference made to the use of nux vomica and its alkaloid in valvular disease of the heart. In view of my own experience with it, acquired during the last three years, I am not a little surprised at this. Digitalis is still the remedy *par excellence*, when the heart flags so as to produce alarming dyspnœa and beginning dropsy; but all authorities agree that this remedy should be withdrawn as soon as its beneficial effects have been secured. Even strophanthus must be discontinued after a time, though its administration may be continued longer than that of digitalis. It is singular that authorities do not recommend the use of nux vomica and its alkaloid at this stage of the treatment, when the heart, having regained its tone under the influence of the digitalis or strophanthus, is so liable to relapse unless supported by a steady and gentle stimulant. Flint says that "nux vomica or strychnia appears, either directly or indirectly, to have a tonic influence upon the heart," and there he dismisses the subject.

Loomis, writing upon mitral reflux in Pepper's "System of Medicine," asserts that "small doses of quinine and strychnine, alternating with the administration of iron, are often of service." Bartholow suggests the use of nux vomica merely for its stomachic effect. Fagge, as well as many other authors, does not even mention it as a heart tonic. As most of these patients are anæmic and debilitated, every remedy that will strengthen the general system and improve the nutrition will have a most beneficial effect upon the heart. There is universal agreement, therefore, that chalybeates and stomachics are always useful. As digitalis disturbs the stomach and interferes with digestion, it is evident that it should be avoided as much as possible. A steady, continuous support afforded the heart and its nutrition, is far more desirable than the use of "digitalis and active hydragogue purgation repeated from time to time." In regard to this all clinicians are of one mind; but there seems to be a lack of opinion in regard to strychnine as a direct heart tonic and stimulant favorable in these cases. Other things being equal, the nutrition of the heart is better conserved by a steady, continuous, gentle stimulation, such as is afforded by small doses of strychnine, than by an occasional powerful propulsion produced by digitalis and its congeners. The former better favors the nutrition of the heart muscle, while the latter, prolonging the diastole, only occasionally gives the heart-muscle a rest. There can scarcely be any doubt about nux vomica and its alkaloid being a heart tonic. In the words of Bartholow, "increased action of the heart has been experimentally demonstrated to be caused by strychnine." It has been proved that in large doses strychnine prolongs the diastolic pause and augments the force of the systole, and that these results are due to an action on the cardiac ganglia and on the pneumogastric. The blood-pressure and rapidity of the blood-current are increased by contraction of the arterioles. In overdose the heart is arrested in tetanic rigidity. These effects are all similar to those produced by digitalis. The latter, however, is not a general tonic, but rather the reverse, whereas nux vomica in small doses may be administered a long time with the happiest results to both the heart and general nutrition.

Though far advanced toward a fatal issue, the compensation having long been ruptured, the following case illustrated up to the very moment of death the benefit derived from the use of nux vomica.

Case III. *Mitral Regurgitation.*—H. G. T——, aged sixty-six, married, two children living, and one dead of pulmonary tuberculosis. Family history neurotic and tuberculous. Patient was much exposed to hardship during service in the Mexican War. Denied specific disease. Up to the time he entered the army his health was excellent. Twice during campaigns he suffered severe attacks of rheumatism, chiefly in the arms. On account of exposure and the intense heat, he was several times returned to the hospital with severe diarrhœa. His bowels have been weak ever since. Later on he was unsuccessfully operated on for external bleeding piles. He is now troubled with costiveness. When he first consulted me, January, 1893, he was suffering from a great deal of headache and vertigo. When he arose in the morning his sight was blurred. He had frequent attacks of nausea with a desire to vomit. Digestion has always been bad. Has never used tobacco or stimulants of any sort. There was a constant hard cough and much difficulty with breathing. There was no pain, but a good deal of præcordial distress. He said he felt as though his lungs were "filled up;" had no appetite whatever, and felt exceedingly weak. He was obliged to sit up most of the night to feel at all comfortable. Micturition was difficult, but not so bad as six or seven years ago, when he had to catheterize himself. The patient was pale and emaciated. There was no swelling of the arms and legs, though the abdomen was slightly enlarged. Dropsy had not shown itself yet to any very marked extent. The liver was enlarged, the lungs congested, the conjunctivæ red. Eyesight and hearing were good. The scrotum was slightly enlarged with hydrocele. Upon inspection and palpation the apex-beat of the heart was violent and lower than usual, while the area of cardiac dulness much increased. With the ear over the cardiac apex, could be heard a loud, rough, grating sound. At none of the

valves except the mitral, could I distinguish a murmur. The mitral murmur, however, was pronounced and associated with systole. The second sound of the heart was feebly audible, though not sharp. The pulsations were irregular, tumultuous, and labored. The radial pulse was the same in both arms, though markedly irregular, like that of the heart. Examination of the urine revealed nothing abnormal, but a trace of albumin. The present attack began two weeks prior to my first visit, and had come on very gradually. About ten years ago the patient fell suddenly to the floor in an unconscious state, and was thereafter confined to his bed for a month. A year later he had a severe attack of vertigo without unconsciousness, which also caused him to fall. On account of his heart trouble he was unable to attend to his business for the last few years. He was thoroughly acquainted with the seriousness of his condition, so that, in spite of a certain degree of obstinacy and nervous irritability which gave rise to more or less impatience, I succeeded very well in getting him to follow instructions. Absolute rest and a light dry diet were enjoined, while hydragogue cathartics, digitalis, and chalybeate tonics were administered pro re nata. In a couple of weeks he was relieved of many of his symptoms; could lie down and sleep through the entire night; and was able to go out and take a little exercise each day. As soon as I withdrew the digitalis, I replaced it with the tincture of nux vomica or strychnine, to the well-expressed comfort and satisfaction of the patient. Thus he was treated for more than a year, coming every now and then to my office for advice, and doing as well as could be expected. He declared that he believed it was the nux vomica that helped him more than anything else.

Several weeks ago I was hurriedly sent for, and found the patient in bed with a return of all the old distressing symptoms. I had not seen him for a few weeks prior to this attack, and was therefore surprised to note the distressing cough, marked weakness, anasarca of the lower extremities, and the presence of small ulcers in the mouth. The state of the patient was indeed serious, and I so informed the family. The usual treatment with cathartics, digitalis, strophanthus, and convallaria was instituted, but with only slight and temporary benefit. It was clear that the man had taken to his bed now for the last time. In spite of every effort he soon became water-logged, and died quietly in a semi conscious condition on the morning of April 26, 1894. Up to the moment of his death he begged for, and was given, frequent small doses of tincture of nux vomica, as that gave him the most comfort. The widow afterward informed me that, in spite of all entreaties on the part of his family and friends, he had gone to one of the advertising dispensaries of this city, where they promise cures for monthly payments; almost immediately he began to fail, so that he had to take to his bed and send for me a couple of weeks before his death. Death is liable to occur at any time in valvular disease of the heart, but I believe this man's life might have been prolonged a while longer if he had not suddenly broken off, for a much-promising advertised treatment, one which was helping him but not doing it as rapidly as his impatience could endure. While under my care the patient had to resort less frequently to digitalis than he otherwise would had he not taken the continuous small doses of nux vomica which had been ordered him.

My notes record a number of other cases in private practice in which nux vomica and its alkaloid in small doses gave great satisfaction. As a stomachic tonic, a respiratory stimulant, and heart tonic, it fulfils three of the most important requirements in the treatment of valvular heart disease. Under the head of treatment of senile heart, Balfour lauds strychnine as a "most valuable remedy, especially when venous congestion and a tendency to catarrh exist, as is so constantly the case when the circulation is feeble. In a great many cases, even of well-marked senile irregularity, the continuous use of strychnine is sufficient of itself to promote a cure, while it is a powerful adjuvant to digitalis; and the combination of these two drugs often enables the most admirable results to be obtained, quite unattainable by either separately."

What Balfour finds true of the use of strychnine in senile heart, I have found almost equally true in cardiac valvular disease. The prolonged use of digitalis and strophanthus has its disadvantages. The former is supposed to have a cumulative action and certainly disarranges the digestion; the latter is not always effective in relieving the dyspnœa, and is powerless in preventing or removing œdema. Nothnagel says that in a few cases convallaria and adonis vernalis do very well, but that as a rule the so called substitutes for digitalis are of little use. Caffeine is more of a diuretic than a cardiac tonic, and therefore cannot be relied upon alone. Coronilla is slow in its action and is not always certain. One feature of the Oertel treatment I have found of inestimable value in this class of cases, and that is the rigid adoption of a dry diet. In two or three cases a withdrawal of fluid from the diet, as much as could be borne, produced in a short time a noticeable improvement in the dyspnœa and pain. I have allowed milk in small amounts as the only beverage, varying it with kumyss, matzoon, and buttermilk. Remembering the overburdened condition of the circulation, with the attendant dropsy and defective renal function, the use of a dry diet seems to me eminently rational.

In conclusion, my best results in the management of cases of valvular heart disease have been obtained by the following outlined treatment: Physical rest, associated with light, regular, pleasurable exercise; absence of all worry, mental anxiety, and sudden emotion; plain abundant, nutritious diet, dry as possible; absolute avoidance of all stimulants; the use of general tonics and hydropathic measures conducive to the building up of the general constitution. For the heart, the continuous use of small doses of nux vomica or its alkaloid, reserving the more powerful heart stimulants like digitalis for threatened dropsy. In two of my cases I obtained better results from the combination of digitalis, strophanthus, and convallaria than from either alone. In others I have found that either of these special heart tonics alone produced the greatest comfort when assisted by minute doses of strychnine. I believe it is bad treatment to use larger doses of any drug than is absolutely necessary, and ofttimes three to five drops of digitalis with $\frac{1}{100}$ or $\frac{1}{60}$ grain of strychnine will act better than the larger doses of either alone. The use of strychnine alone is, in the majority of these cases, the best for prolonged treatment. I have said but little of the management of such special symptoms as dropsy, dyspepsia, etc.; for these, of course, will require special treatment as they arise. They will present themselves less frequently, however, the more the general health is built up and the action of the heart strengthened and steadied.

Columbus Memorial Building.

The Price of a Physician.—Under the Roman Empire the prices paid for slaves were ruled, as prices always are, by the relations of supply and demand, the capture of a province being followed by a glut in the market, and a consequent fall in value. The value of an ordinary slave without special accomplishments, fluctuated between five and eighty dollars, but that of a physician remained nearly constant, for a long period, at the very respectable figure of $10,000.

Tuberculosis in Domestic Pets.—Dr. Foehner, of Berlin, has examined some seventy thousand sick domestic animals in the past seven years, and of this number only two hundred and eighty-one suffered from tuberculosis. The parrots were relatively the most frequently affected, twenty-five per cent. of those coming under his care being tuberculous. Of the cats, only one per cent. showed symptoms of the disease.

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ANÆSTHESIA BY ETHYL BROMIDE AND CHLOROFORM.

DR. W. S. MAGILL, of Chicago, describes a new and rapid method of anæsthesia by bromide of ethyl and chloroform (*International Medical Magazine*). The procedure is as follows:

"Everything being in readiness for the operation—instruments in order, the surgeon and aids prepared for immediate action (for the patient will be ready in about one minute if anæsthesia is performed on the operating-table)—draw out all pillows from under the patient's head. Note pulse and respiration, and the time exactly. Opening the bottle of ethyl-bromide, pour a few drops upon the folded towel and pass it over the nose of the patient to accustom him to the odor. Immediately, upon the upper side of the towel, pour out about three grammes of the reagent, and, rapidly reversing the towel, apply it closely to the nose and mouth, so that every inhalation may be taken through its meshes. For a moment the patient holds the breath, perhaps making a slight effort to pull away the towel, at the same time swallowing in rapid succession the saliva which is secreted abundantly. In an instant a long inhalation is made, followed by others, especially if so commanded in a decisive voice by the anæsthetizer, the face becomes red, sometimes violently congested, the eyes fixed, the eyelids frequently difficult to raise with the finger, the lines of the face are drawn, the under jaw firmly set, and a general muscular contraction of short duration may be manifested. After three or four long inhalations the patient has lost all sense of pain or touch, but is still conscious. This is the moment for operation, if ethyl-bromide alone is used. A few grammes again poured on the towel and inhaled result in complete unconsciousness, if not already obtained with the first dose. Time, one-half to one minute and a half; pulse, rapid and strong; respiration, deep, and of about normal rapidity.

"At this moment pour out upon another folded towel about ten drops of chloroform, throw aside the ethyl-bromide, and immediately apply the chloroform towel in the same way. Watch carefully the pulse and respiration. At this time the operation should commence if the patient be already on the operating-table.

"The iris should be carefully watched. At the commencement of the ethyl-bromide administration, from normal contraction the iris dilates the pupil by its relaxation. The dilatation is rapid, and at the moment of analgesia reaches the maximum, and alone indicates the instant to change the reagent. The dose of chloroform indicated above is the first and only strong one; the anæsthesia must be maintained by pouring frequently one, two, or three drops of chloroform upon the towel, which is immediately reversed and applied over the nose and mouth, taking care that the patient has no chance of inhalation during the change."

Dr. Magill finds records of sixteen alleged cases of death from the administration of bromide of ethyl. Six of these he finds were really caused by bromide of ethylene, and of the other ten he finds that only one can be fairly attributable to the ethyl. He adds:

"The practical advantages of successive anæsthesia—the rapidity, the elimination of the disagreeable phases of chloroform or ether which precede or retard recovery from anæsthesia with these reagents, the diminished quantity of the toxic agent required—all these elements of superiority combine to invite the notice and experimentation of surgeons. Its advantages have, on two occasions, been discussed recently at the Société de Chirurgie of Paris—on May 2 and 9, 1894—where Dr. Segond relates its introduction into his wards by Dr. Malherbe, coming directly from Professor Terrier's service. With Segond the method was immediately preferred to all others, and at the meeting of the Society his official statistics of one year's use of successive anæsthesia are given—four hundred and forty-three cases without an accident of any kind. Dr. Bazy related his first acquaintance with the method in the wards of Dr. Brun, and its immediate adoption by him. Dr. Monod spoke in much the same way. Dr. Richelot was already on record as endorsing the method to the extent of preferring it in all cases of heart or pulmonary troubles which might be contra-indications of chloroform or ether.

DANGERS OF PRACTICAL BACTERIOLOGY.

A PRACTICAL but unfortunate illustration of the truth of the old adage that "Familiarity breeds contempt" is shown by the death from cholera recently, in the Hamburg Hygienic Institute, of Dr. Oergel, one of the assistants in that Institution. The facts of the case are stated in great detail, by Dr. Reincke, in the current number of the *Deutsche Medical Wochenschrift*, and would seem to prove that the ill-fated young physician inadvertently swallowed some suspected water which had been sent to the laboratory for examination. And although subsequent bacteriological examination could not prove the presence of the cholera bacillus, it was not at all improbable that the water had become contaminated from cholera cultures with which he had been working.

Knowledge is too often the result of dearly bought experience, and the fact of one such case as this should go far to counteract the opinion, which has been growing apace since the last cholera epidemic, that the comma bacillus is a much-maligned organism, and is really not nearly so dangerous as was its repute. Although Von Pettenkofer and others may believe that cholera organisms may be swallowed with impunity, and Dr. Ernest Hart may avowedly prefer the shelter of a well-directed cholera hospital to any other during the prevalency of this disease, it is a fact notwithstanding that a too intimate association with the vibrios of this dis-

ease is liable to be followed by disastrous and lamentable consequences.

The opinion that no pathogenic germ can act other than in a favorable soil is continually gaining ground; but the fact that a person is apparently in a healthy state is no safeguard. A slight local departure from the norm in some part of the body may give the germ a hospitable point of entrance, and then sinister manifestations rapidly follow.

In the case of Dr. Oergel, general health and resistibility may have been impaired by confining and exacting laboratory work, and chances that were taken with a greater exemption from consequences when in a vigorous condition proved fatal when taken after a period of confining labor.

As Dr. Reincke remarks, it is to be hoped that this sad event may not be without warning to those who would treat the cholera organism with too great familiarity.

ST. LOUIS AS A MEDICAL CENTRE.

St. Louis is just now the centre of a very considerable depression of spirits and harrowing self-analyses. The trouble began when Professor Chaplin, Chancellor of Washington University, said publicly some unkind words about the disproportion between the quantity and the quality of the St. Louis medical colleges. Then an esteemed practitioner of St. Louis, Dr. Thomas O'Reilly, a little later is said to have addressed to the Health Commissioner an eloquent protest against the reckless surgery and the excessive cœliotomic zeal of the much-professored city. The editor of *The Medical Mirror* has been devoting his most alluring alliterations and his elegant and eulogic eloquence to the purpose of refuting all charges and restoring the self-esteem of his justly celebrated townsmen.

"St. Louis," he says, "has been charged with possessing eleven medical colleges, but there are really only six regular schools. And why are there so many as that? Simply because the two oldest medical colleges (both being over fifty years old) were not possessed of a generous spirit in the direction of encouraging and utilizing [illegible]" the awkward terms "lady doctor," "woman doctor," "female practitioner," etc., has been started in the *Glasgow Daily Herald*. "Doctor" indicates the male practitioner; "doctoress" is felt to be inadmissible. "Doctorein," plainly of quasi-German parentage, is suggested. "Doctorein Mary Walker" would be distinctive enough, but slightly clumsy and un-English. The irreverent correspondent thinks it reminiscent of margarine—an objection which may weigh with the students of the Glasgow Queen Margaret College.—*Lancet*.

The Physiological Effects of Cycling.—The physiological effects of cycling have recently been studied by Dr. Blazhevitch, of St. Petersburg, who publishes his results in his "Graduation Dissertation." He tabulates [illegible] or St. Louis in particular should be characterized as a "hotbed of medical anarchy." And we are quite in agreement with the *Medical Mirror* in denying that the charge of "surgery run mad" has any special truth as applied to that locality There has been some reckless surgery no doubt ever since surgery began, and especially since anæsthesia was introduced. There always will be foolhardy people in every class of society, but probably fewer among surgeons proportionately. There has been a wave of zeal for laparotomy which has swept over nearly all parts of the country. It certainly rose very high in New York at one time, as we have often remarked. We doubt if the high-water mark has ever reached an equal point in St. Louis.

We trust that the remonstrances of the *Mirror* will clear the atmosphere and perhaps be successful in condensing the colleges, improving their status, and making of St. Louis what it ought to be, a great medical centre.

WHO IS PROFESSOR ZAKHARIN?

A great many curious stories have been published about the eccentricities of Professor Zakharin, the Czar's physician. His name is not familiar outside of Russia, although Russian medical literature so far as it is valuable is quickly turned into German, English, or French. The conclusion of many of the profession has doubtless been that Zakharin was an errant and eccentric man who had gained position and notoriety rather through his bizarre character than any solid scientific merits. A St. Petersburg correspondent of the *British Medical Journal* says, however, that, though eccentric, the Professor is distinguished by something more than eccentricity. He has the most extensive and lucrative consulting practice in Moscow, he fills with distinction the Chair of Medicine in the University of Moscow, he is the author of "Clinical Lectures," which is a classic in this country; and he has done more, I am assured on the best authority, to raise the status of the medical profession in Russia than any other man living.

We are glad to learn that the Professor is really the leader of medicine in Russia. Still it is remarkable that his fame has heretofore been so local.

News of the Week.

Disappearance of Cholera.—Latest advices announce such a decrease of Asiatic cholera in Europe as to deprive the disease of any further interest this season to public health authorities. For the week ending October 10th, Surgeon Fairfax Irwin, U. S. M. H. S., reports a decline of nearly fifty per cent. in the number of cases in Austro-Hungary, which has been the principal seat of the disease in Europe outside of Russia. In this latter country, also, the decrease has been marked, and the belief is expressed that the advent of cold weather will put an early end to the epidemic. The port of Marseilles has been declared free from the disease, and inspection of vessels has been discontinued; "sporadic" cases continue to occur elsewhere in France, and in Holland and Belgium, but these excite no alarm, and the cholera epidemic of 1894 in Europe is practically at an end.

Dr. George M. Sternberg, Surgeon-General of the Army, received the degree of LL.D. from the University of Michigan at its last Commencement.

The New York State Association of Railway Surgeons will hold its fourth annual meeting at the New York Academy of Medicine, on Thursday, November

15th, at 9.30 in the morning. At eight o'clock in the evening of the same day, there will be a joint meeting of the Section on Medico-Legal Surgery and of the Medico-Legal Society.

The American Academy of Railway Surgeons will hold its first meeting in the Grand Pacific Hotel, Chicago, on November 9 and 10, 1894. The Academy has adopted a motto, which is: "The higher the order of railway surgery, the greater the protection to the employee, the passenger, and the company."

The Mississippi Valley Medical Association will hold its next annual meeting at Hot Springs, Ark., on November 20, 21, 22, and 23, 1894.

The French Public and the Serum Treatment for Diphtheria.—A correspondent of *The Lancet* writes that public interest in the new treatment for diphtheria has taken a very practical form at Paris. The subscriptions now being received for the foundation of an antitoxin department at the Institut Pasteur, whose business it will be to supply the vaccine to the practitioners of France, have reached the total of $51,100. The Budget Commission has, on the proposition of M. Rouvier, voted 100,000 fr. as a subvention to the Assistance Publique for the same purpose. It remains for the Chamber to confirm this vote. The Municipal Council has instructed its special commission to arrange with Dr. Roux for the distribution, at the Council's expense, of serum to different depôts to be created in Paris. The Comité Consultatif d'Hygiène Publique de France, at its meeting yesterday at the Ministry of the Interior, resolved to address a congratulatory letter to Dr. Roux and his illustrious master, M. Pasteur, and also to ask of the Government an annual credit to facilitate the diffusion of the antitoxin. The enthusiasm shown in favor of the movement is extraordinary. For example, a livery-stable keeper offers a horse to the Pasteur Institute to serve for the preparation of the serum. A vote of 10,000 fr. will be proposed at the next meeting of the Conseil Général de la Seine. Numerous prefects of departments having addressed inquiries to the President of the Council, who is also Minister of the Interior, on the value of anti-diphtheric seropathy, the Minister referred the question to the Academy of Medicine, which body named a commission to study the matter. The commission, composed of MM. Bergeron, Proust, Cadet de Gassicourt, and Strauss (reporter), to-day delivered its conclusions, which I transcribe *verbatim*: "Votre commission vous propose donc d'émettre un avis favorable sur l'emploi du sérum antidiphthérique, et de formuler, en outre, les vœux que l'Institut Pasteur soit mis en mesure de faire face aux demandes qui pourront lui être faites, soit par les médecins, soit par les pouvoirs publics."

Monument to Charcot.—The pupils and former associates of Charcot, in Paris and throughout France, are engaged in raising a fund for the erection of a bronze statue of him in the Salpêtrière. This movement is now receiving cordial and material support in Germany, in England, and in Italy.

It has therefore seemed desirable to the New York Neurological Society that the profession in America join in this testimonial.

For this purpose the society has appointed a committee consisting of Drs. Edward D. Fisher, E. C. Seguin, M. Allen Starr, Charles L. Dana, and C. A. Herter, to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the central committee in Paris.

Death of Dr. George W. Moody.—Dr. George W. Moody, of Huron, N. Dak., died of cerebral hemorrhage October 13th, aged forty-two years. He was educated in Chicago, graduating from the Chicago Medical College in 1878. He moved to Huron, Dak., in 1880, and became surgeon of the Central Dakota Division of the Northwestern Railroad. A widow and one son survive him.

Professor Carl Fraenkel, of Marburg, has been elected to the Chair of Hygiene in the University of Halle, rendered vacant by the transfer of Professor Renk to Dresden. Professor Fraenkel will not assume the duties of his new position until some time next year, his place in the interim being occupied by Professor Behring, of the Institute for Infectious Diseases in Berlin.

Hospital Beds for Cases of Appendicitis.—At the last meeting of the Board of Managers of the University Hospital, the Director was authorized to set aside certain beds to be used by Professors William Pepper and J. William White for cases of appendicitis, those gentlemen being engaged in a special investigation of the symptoms, treatment, and pathology of that disease.

Perhaps we will next have special hospitals for appendicitis.

The Practice of Medicine by Women in 1572.—In an address before the Yorkshire Branch of the British Medical Association this summer, Mr. W. H. Jalland stated that York seems to have been ahead of most places in countenancing the practice of medicine by women. In closing his address (*Quarterly Medical Journal*) he says: "I find on reference to the Corporation Minutes dated 1572, Elizabeth XIV., the following entry: 'And for as much as it appeareth that Isabel Warrick hath skill in the science of surgery and hath done good therein, it is therefore agreed by these presents that she upon her good behaviour shall use the same science within this city without let of any of the surgeons of the same.'"

[illegible], in the current number of the *Deutsche Medical Wochenschrift*, and would seem to prove that the ill-fated young physician inadvertently swallowed some suspected water which had been sent to the laboratory for examination. And although subsequent bacteriological examination could not prove the presence of the cholera bacillus, it was not at all improbable that the water had become contaminated from cholera cultures with which he had been working.

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The Four Years' Course at the College of Physicians.—In the College of Physicians the new four years' course commences with the present season, but notwithstanding this fact the registration indicates that a larger class will enter this year than last year, when the highest number yet recorded was reached. In the session of 1893–4 the

total enrolment of students numbered 766, a gain of 112 over the previous year. To the development of the four-year curriculum much attention has been devoted by the Faculty. Each student will be examined, each year, upon the work of that year, and each student of the four-year will be required to elect from a list of elective courses either one course or more, as may be hereafter determined.

Mission Hospital in China.—President Seth Low, of Columbia College, and his brother, have just built for and presented to the mission station of the Protestant Episcopal Church in Wuch-ang, China, a well-appointed hospital for the use of the mission and the people of the town.

The New House of Relief of the Society of the New York Hospital, at the corner of Hudson and Jay Streets, was opened for inspection on Tuesday, the 30th ult. It is to take the place of the emergency branch of the New York Hospital, commonly known as the Chambers Street Hospital.

Bellevue Hospital.—It is announced that Dr. Lucius C. Adamson has been appointed to succeed the late Dr. Stuart Douglas in the charge of the insane patients.

The New York Cancer Hospital.—Dr. Charles N. Dowd has been appointed a surgeon to the hospital.

St. Luke's Hospital to be Moved Next July.—At a meeting of the Board of Managers of St. Luke's Hospital, held October 29th, it was stated that an agreement had been made with the purchaser of the hospital property on Fifty-fourth Street and Fifth Avenue, by which the delivery of this property is deferred until July 5, 1895. The work of the hospital will, therefore, be continued without interruption during the coming winter at the present site. The new hospital buildings in 113th Street and Morningside Avenue are being pressed rapidly forward, so that the work of the hospital may be transferred there next July.

"Doctorein."—Wanted, a handy and convenient name for the "lady doctor." A discussion having for its aim the discovery of an appropriate title to take the place of the awkward terms "lady doctor," "woman doctor," "female practitioner," etc., has been started in the *Glasgow Daily Herald.* "Doctor" indicates the male practitioner; "doctoress" is felt to be inadmissible. "Doctorein," plainly of quasi-German parentage, is suggested. "Doctorein Mary Walker" would be distinctive enough, but slightly clumsy and un-English. The irreverent correspondent thinks it reminiscent of margarine—an objection which may weigh with the students of the Glasgow Queen Margaret College.—*Lancet.*

The Physiological Effects of Cycling.—The physiological effects of cycling have recently been studied by Dr. Blazhevitch, of St. Petersburg, who publishes his results in his "Graduation Dissertation." He tabulates 270 observations on 104 individuals of both sexes and various ages, distinguishing between ordinary riders and those who train themselves for, and ride in, races or attempt to cover long distances. He finds that the play of the chest is diminished immediately after riding, especially in the cases of women and children, and of men racing or commencing cycling, the diminution amounting in these cases to from 1 to 1.5 centimetres. In men accustomed to the exercise the effect was scarcely perceptible. The general effect of the summer's riding upon the male votaries of the sport was, according to Dr. Blazhevitch, practically *nil.* In women and children the effect was slightly to increase the vital capacity. The arm power was found to have increased more than the leg power in young persons and in beginners, but in the case of men of mature age who had previously been accustomed to cycling this was not so evident. Speaking generally, the effects of cycling on the system were found to be very similar to the phenomena noticed by Tsymkovski in soldiers who had been running, and by Gruzdeff and Passover as resulting from rowing.

Fin de Siecle Treatment of Gonorrhœa.—Among the numerous suggestions on the treatment of gonorrhœa with which the medical press abounds, none has appeared which is so entirely unique as that presented by Dr. Burnside Foster in a recent issue of the *Journal of Cutaneous and Genito-urinary Diseases.* The method proposed is described as follows by the author: "As soon as may be after we have established the diagnosis of a first gonorrhœa, the patient should be etherized and properly prepared; a buttonhole opening made in the perineum, and drainage of the bladder established. Through a properly contrived apparatus the anterior urethra could then be thoroughly flushed with any antiseptic or cleansing fluid and treated on surgical principles. The details of the local treatment would vary with the fancy of the operator. The feasibility of packing and distending the anterior urethra with iodoform gauze suggests itself to me; but any one of a great number of methods would, doubtless, be efficacious."

Longevity and Drink.—The British Medical Association has been investigating the question of longevity in connection with the use of alcoholic beverages. Deaths to the number of 4,234, taken at random, show the average age of temperate drinkers to be sixty-three years; careless drinkers, fifty-nine years; free drinkers, fifty-seven years; intemperate drinkers, fifty-three years; total abstainers, fifty-one years. The analysis in the case of those who reached the age of over eighty shows that fifteen per cent. were total abstainers, ten per cent. heavy drinkers, and seventy-four per cent. moderate drinkers. Of those who lived more than ninety years, fifteen per cent. were total abstainers, nine per cent. were hard, and seventy-five per cent. moderate, drinkers. These figures must be applied with some caution. A certain large proportion of total abstainers are so, because of some form of ill-health or natural weakness.

The Correction of Urinous Odor.—It is well known that the essence of turpentine gives, when taken internally, an odor of violets to the urine. This fact has been put to good account by a learned professor, who has for some time been in the habit of giving the essence in ten-drop doses three times daily to persons afflicted with incontinence of urine. In a short time the disagreeable odor of the secretion is replaced by the characteristic odor of the violet, to the great satisfaction of those about the patient. The treatment can be continued without inconvenience for several weeks, and is only counter-indicated in gastric catarrh and nephritis.

Clinical Department.

DOSES OF MORPHINE HABITUES.

By L. S. OPPENHEIMER, M.D.,
BARTOW, FLA.

In a recent number of the MEDICAL RECORD Dr. Groom, of Iowa, contributes a note on the case of a lady who was supposed to be taking an extraordinary daily quantity of morphia—thirty grains. My experience is, of course, limited in these cases, but I may safely say that in a general practice of twenty years I have seen not less than twenty persons who were taking a full drachm of morphia every twenty-four hours. The reason that the physician so rarely knows the actual quantity of morphia taken by his patients and friends is because the latter usually try to conceal the fact from everybody, and the druggist who furnishes the article is the only person who can approximate the quantity consumed in the majority of these cases.

A man of my acquaintance, Mr. B. C. T——, has authorized me to use his name in reporting the fact that he to-day began his thirty-second drachm of morphia in thirty days, all purchased from one store. He attends to his daily business about as well as the average business man. This is not a rare case, but is mentioned because of its illustrating the above.

PILOCARPINE IN URTICARIA.

By L. B. McBRAYER, M.D.,
ASHEVILLE, N. C.

On Monday, September 17th, I read your valuable journal of September 15th, and found therein an article by R. Abrahams, M.D., on "Pilocarpine in the Treatment of Acute and Chronic Urticaria."

My little boy, aged two years and nine months, happened to be suffering very badly from this very unpleasant malady just at this time. The wheals would cover his face at times and seemed to have a special liking for his nose, which they would distort terribly. At one time the wheals coalesced until they covered nearly the whole of the posterior surface of the thigh. He had slept very little the previous night, although I had given him two grains Dover's powder. In fact it was the worst case of the kind I have seen. The itching was very annoying. I had cleared the bowels out well, and he had eaten almost nothing for the past twenty-four hours. He had been bathed in solution of soda bicarbonate and several other things, yet he continued to grow worse. After reading the article I gave him on Monday night, at bed hour, $\frac{1}{16}$ grain of pilocarpine muriate. He slept very much better, and on Tuesday morning there was no evidence whatever of the urticaria.

Last night (Tuesday) he slept as well as he ever did in his life, and is perfectly well, and all this with only one dose $\frac{1}{16}$ grain of pilocarpine. I have written this hoping to emphasize the article referred to, and hope that the profession may profit by it.

A CASE OF ORBITAL CELLULITIS ABORTED.

By GUY C. M. GODFREY, M.D.,
FIRST LIEUTENANT AND ASSISTANT SURGEON, U. S. A., POST SURGEON FORT WASHAKIE, WYO.

Private S——, Hospital Corps, U. S. A., aged twenty-two, a large man, dark-complexioned, and of a good family history, had a boil near the outer corner of his right orbit. He had opened the abscess before he came to me, but was alarmed at the condition of his eye. The skin over the orbit was red and the subcutaneous tissue much infiltrated. The lids were swollen and the conjunctiva injected. There was considerable chemosis, and the cornea was beginning to be cloudy. He also had a slight fever. In short all the symptoms of incipient orbital cellulitis. I immediately ordered the boil to be dressed antiseptically and had a wad of cotton placed in the orbit, and over that a snug roller bandage. The patient was then put to bed. In about an hour I had the dressings removed. I then made a free incision downward and outward in the line of a wrinkle, so as to provide for drainage and leave no disfiguring scar. I afterward painted the skin over the entire orbit with a five per cent. solution of nitrate of silver. The abscess was then dressed with powdered boric acid, a compress of cotton was placed in the orbit, and over all a tight roller bandage. The patient was then put on strong tonic treatment. At the end of three hours I removed the compress and found that, though there was still some redness in the skin, the swelling had mostly disappeared and that the chemosis was going down. I again painted the skin over the orbit with the solution of nitrate of silver and had a new compress put on.

The next morning all the signs of inflammation had disappeared. The skin was normal in color except where it was darkened by the solution. There was no chemosis; the cornea was clear and the patient felt much better. The abscess was washed with a solution of bichloride of mercury (1 to 1,000) and dressed with boric acid. The compress was not reapplied, but the tonics were kept up. The patient had an uninterrupted recovery, and has had absolutely no trouble with his eye since then.

This method is easy of application and most potent in results, if the disease is taken early. When the danger of the inflammation travelling along the ophthalmic vein to the meninges is so great, it would seem that the method used in this case would be much better than that of causing pus to form, and then draining through the conjunctiva or through the lower lid.

SYMPTOMS OF POISONING FROM A PROBABLE OVERDOSE OF PHENACETINE.

By FRANCIS E. KNOWLES, M.D.,
SOUTH ORANGE, N. J.

Miss B——, aged about thirty, rather stout, and very healthy, had a severe attack of migraine. She was recommended by her friends to take one of Dr. C——'s magic headache powders, which she did, but obtained no relief, and in about an hour and a half repeated the dose; this also did not produce the desired effect. She was then advised to try phenacetine; she drove down to the drug store, and took ten grains, drinking with it a glass of carbonic water. She drove directly home, about a mile distant from the village, and in a few minutes was taken with a well marked chill. Her friends foreboding evil, I was sent for immediately. On arriving, and before being able to ask any questions, I was told the history of the case as related above. I found the patient prostrated from what seemed to be muscular weakness; there was great cardiac depression; pulse forty per minute, scarcely perceptible at the wrist; respiration was labored and slightly quickened; there was general cyanosis, which was particularly marked at the extremities; cold perspiration; feet and hands were nearly cold; she had an anxious expression, and was trembling from nervous excitement. She said her whole body felt numb. Heat was applied, and the limbs rubbed vigorously, and five-minim doses each of tincture of digitalis and nux vomica in a teaspoonful of brandy were administered every fifteen minutes, to stimulate the heart and respiration. Her condition commenced to improve immediately, and in three hours she felt well again.

I examined one of Dr. C——'s magic headache powders, which of course is a patent medicine, and was satisfied that it contained phenacetine or some other coal-tar derivative. The patient had been used to the homœopathic treatment all her life, and the doses which her allopathic friends prescribed for her proved entirely too large. It has been my experience with people who have had homœopathic treatment for a number of

years that smaller doses will produce their physiological effect than with those whose systems have become accustomed to larger potions.

SIXTY GRAINS OF MORPHINE AT A DOSE.

By M. J. SWEENEY, M.D.,

KANE, PA.

I NOTICED in the columns of your excellent paper of September 15th, under heading "A Large Dose of Morphine," an account of a case using thirty grains a day. The final sentence in that article was "One ounce of P. & W.'s morphia every sixteen days beats the record of any case I ever heard of." Allow me the privilege of establishing a new record. I have under my notice now a case of morphinism, cured by Mattison's method of treatment, who took sixty grains each day, not hypodermatically but by the mouth. When he came to me for relief from his habit, with the story of sixty grains per day, I could not believe it and told him so. I, however, gave him four 15-grain powders, with instructions to take one every four hours, intending to watch the effects of the first dose and be guided accordingly. He deliberately took the four powders, emptied them into the palm of his hand, and ate the morphine like so much flour. To say I was horrified is putting it mildly. I instantly loaded up my hypodermic with a tenth of apomorphine to emetize him, and when he objected I felt like sending for the undertaker at once. His perfect *sang-froid* and smiling assurances allayed my fears a little, so I sat down and decided to watch him, interfering forcibly, if necessary. I was more than surprised, after eight hours' observation, to witness no untoward symptoms whatever. He is entirely off the drug now, in good condition, and I see him every day.

A CASE OF ANOPHTHALMIA DEFECTUS OCULORUM.

By LEONARD LANDES, M.D.,

NEW YORK.

I DESIRE to put the following case on record on account of its great rarity.

About July 1st I was called to see a Mrs. G——, a healthy woman, thirty years of age, who had just given birth to a female child. I found her in no worse condition than ordinarily is the case after a very hard labor, as in this case. She asked me to examine the child, saying it could not open its eyes. I found a perfectly developed child, weight about six pounds. There were eyelids, eyebrows, and ocular cavities, but when I succeeded in opening the lids I found no eyeballs. It was evident that the child was born without eyes. The woman's family history was good, and she had previously given birth to two children; both of them died a few days after birth. Her husband is a healthy-looking man of about thirty-two years of age, but I found, later on, that he had been an inmate of an asylum, having been afflicted with melancholia. He is now perfectly well, and his family history is also good. I took the case to Dr. F. F. Reyling, who kindly examined it for me, and he also concluded that the child was born without eyeballs. Another peculiarity of this child is that it has six fingers on each hand and six toes on each foot. Dr. Reyling tells me that he never saw or heard of such a case before.

Since I have had this case in hand my attention has been called to some other cases of a like character. There is now in the Missouri School for the Blind, at St. Louis, a girl, aged eleven, the daughter of a clergyman, who was born without eyeballs, but with eyelids and sockets well developed. This case corresponds in every respect with the one above recited, except as to the supernumerary fingers and toes. This St. Louis case was examined by Dr. Green, of St. Louis, the celebrated oculist. The report of the school superintendent shows that this child is bright in intellect, she having a very high percentage in all studies.

Dr. V. Condory, of Hot Springs, Ark., has called to my attention a similar case that came to his notice when he was on board the steamship Fatherland, in 1871. Among the third-class passengers, five hundred in number, was a young woman, eighteen years of age, an Israelite, who gave birth to a female child without eyes.

Dr. Edward Frankel, of this city, refers me to what is said on this subject by Dr. Karl Assmund Rudolphi, Professor of Anatomy in the University of Berlin, 1816 to 1840: "Anophthalmia defectus oculorum is found in various degrees; occasionally both eyes, with all the adjunctive parts, are absent, as in cases where the heads of one monstrosity are so joined together that only the occiputs are visible laterally; while on the other hand I have on one occasion seen a well-developed, mature fœtus, which died after birth—case published in the Reports of the Berlin Academy, 1840 to 1850—where the right eye was totally absent, so that there were neither ocular cavities, eyeball, eyelids, nor optic nerve, and the skin was smooth from the forehead to the cheeks; in the brain the thalamus opticus was rudimentary, etc. I have also observed the absence of both eyes in an otherwise well-developed child, in whom the eyebrows, eyelids, and all relative parts, were completely developed."

I have also noticed in Bruneau's "Old French Natural History" a case of this kind in a male child. The child died a few weeks ago. I tried very hard to get an autopsy but did not succeed.

A CASE OF HYDRAMNION, WITH ATRESIA ANI IN THE CHILD.

By FREDERIC H. PLUMMER, M.D.,

PLYMPTON, MASS.

I WAS called at 4 P.M., on September 20, 1894, to Mrs. S——, in labor with her fifth child. On reaching her I found that she had been in labor for three days prior to my being summoned, the pains having been rather weak but wearing. The abdominal examination revealed an enormously distended uterus, and extreme suprapubic œdema. Palpation failed to elicit any definite information as to the position of child, and the fœtal heart-sounds were inaudible. Vaginal examination showed an unruptured amniotic sac protruding through a fully dilated cervix, with breech presenting, but not engaging; after a moment of exploration the presenting part disappeared and its place was taken very quickly by the head. Rectum and bladder were empty, and passages well lubricated and dilatable. Concluding that the case was one of hydramnion, I waited until the head again came within reach, and after the pain subsided ruptured the membranes. I had a Marcy pad under my patient, which quickly filled, but from the hollowing of the bed only a small part of the fluid passed through the outlet, the major part overflowing, soaking a quilt folded under her, and also the feather-bed through to the under mattress. The head engaged L.O.A. after rupture of the membranes and the labor was rapidly completed, the child weighing five pounds. He was extremely cyanotic, and the cord being so short as to prevent my getting his face from between his mother's thighs, I thought best to sever it immediately. Then after I had cleared out the mouth and fauces, and given a few mouth-to-mouth insufflations, the child commenced to cry and breathe. A few drops of urine were voided during his toilet. The mother had rather a free hemorrhage, and the uterus was slow in retracting. Firm manipulation controlled both hemorrhage and relaxation, the placenta being expelled by Credé's method twenty minutes after delivery of the child. On account of possible danger from hemorrhage, the uterus was carefully manipulated for an hour, and then, as contraction seemed good, a binder was applied and the patient's toilet made.

These being the incidents, let me call attention to the abnormal quantity of the amniotic fluid and stricture of the child's intestine. The receptacle beside the bed

contained two quarts of fluid, the folded quilt weighed 12½ pounds as taken from the bed, its dry weight as afterward ascertained being 1½ pound, and there was an indefinite amount of fluid in the feather-bed, probably half as much as was in the quilt. From the quantity collected and the weight of the absorbing materials, we will find that the amount of fluid was approximately twenty pints, which seemed to me to be an unusual amount.

The next morning I found that the nurse (one of the traditional old women who know it all), no meconium having been passed, had administered a dose of castor-oil before my arrival. The next day, the oil being inoperative, I injected half a drachm of glycerine, which brought away a mass about two inches long and three-eighths of an inch in diameter, of a light brownish color, and appearing like a small earthworm folded upon itself enough times to make up the bulk of the mass. This was followed by several small pellets, about the size of split peas, and slightly darker in color than the larger mass. During the day vomiting set in, which soon became dark in color, apparently from containing meconium, and this continued, with increase in number of ejections and darkness of color, till death, on the sixth day.

During this time he lay in a comatose condition, and after third day refused to take any nourishment per orem. Gavage was tried but proved unsuccessful, all ingested matter being vomited almost immediately. The bowels never moved spontaneously, and injections only brought away a few of the small pellets of the same character and color as the first evacuated.

An autopsy was denied, so that I was unable to verify my diagnosis of a stricture of the gut about two inches above the internal sphincter, but think the occurrence of these abnormalities of mother and child make the case of sufficient interest to warrant my reporting it.

I suggested an operation for the making of an artificial anus, but it was refused by the mother, the reputed father having died of phthisis pulmonalis in the early part of January.

A NEW TREATMENT FOR ERYSIPELAS.

By W. V. GAGE, M.D.

M'COOK, NEB.

At the risk of being assailed, after the publication of this article, with numerous letters disputing my claim to originality in the method of handling the above-named disease, I beg leave to call your attention to the treatment of erysipelas with the wet carbolic-acid dressing. The treatment, as far as I know, is original; but I am more than willing that you should demonstrate to me that it is in no way new. Every physician has often experienced a conflict with erysipelas, and has probably many times arrived at the conclusion that his local applications did harm, not much good, or were absolutely inert. Strumpel says, "The chief indications for treatment will be to check the unceasing advance of the disease; but, unfortunately, the means recommended for this purpose too often fail."

Iodine painted over the healthy skin at the border of the inflammation seldom arrests the progress of the local manifestation; and the old-fashioned method with the nitrate of silver pencil is certainly as barren of results. In regard to internal medication, iron has, no doubt, been exhibited more than any other one medicine. Probably no one, however, can state that he has noted any marked diminution in the severity of the disease under the influence of its administration. The same may be said of camphor, benzoate of soda, and salicylic acid.

In the treatment of erysipelas with the wet dressing I have practically discarded internal medication, treating the disease as a local manifestation, which it certainly is; and only in cases where the patient has been treated in a previous attack by the use of both local application and internal medication, have I given some placebo "for the blood." I might add, however, that I have employed sulfonal for sleeplessness and delirum, in some cases, with marked results. For the cure of the disease I rely wholly, however, upon the local use of the wet five-per-cent carbolized dressing. I make my own dressing from the bleached cheese cloth, and the method employed for the preparation of this gauze is so familiar as to need no repetition here. I use a dressing of my own preparation, as the manufactured article which we get in the shops is too dry for the purpose, while that which I keep in my office is put up in a large earthen crock and covered with a five-per-cent solution of carbolic acid. The treatment can of course be applied to any case of erysipelas, but we will take for example a case of the facial manifestation of the disease. If the area of inflammation has encroached upon the line of the beard, the face should be shaven, as should the head if the region of the hair be involved. I have found it best, even though the eyes are not yet affected by the disease, to close them and place over each one a fluffed pledget of the wet gauze. If the ears are involved a small portion of the dressing should be placed back of each one, so that they shall not be pressed against the head by the bandage which is to be applied. Now apply the main dressing, which should envelop the head and face, including all parts which have a tendency to show the blush of the extending disease, being careful to let the dressing extend over the area of redness in all directions. Over the dressing a sheet of rubber tissue or oiled silk should be placed, the edge of the protective lapping well over the edge of the gauze. A bandage is now applied to hold the dressing in place. Care should, of course, be taken to so fix the dressing that the mouth and nasal cavities shall be free, although the eyes are to be covered. You have now converted your patient's head into an object somewhat resembling an Armour ham, but he feels better at once, as the gauze has, by mere contact, removed a considerable amount of heat from the diseased area. This dressing should be allowed to remain on for twenty-four hours, when it is to be removed and replaced by a similar one. I think, if you have never employed a like treatment, that you will be surprised at the marked diminution in the heat and redness over the area covered by the dressing, even after the first twenty-four-hour period. The dressing is to be reapplied as long as the least suspicion of redness of the skin remains.

Compare the last case treated by you with the first one treated by the above method, and notice the difference. Mark the shortening in the course of the disease, and the diminution of all disagreeable symptoms. It is absolutely essential that all signs of inflammation should disappear before the dressing is removed for good, as you will otherwise often be disappointed to notice a return of the disease which you had supposed cured. Better a day too long in a bandage than a repetition of the trouble. In order to satisfy myself as to the efficacy of the treatment, I have, after applying the dressing for twenty-four hours, removed it and left the case without treatment for a short period, on the return call finding, instead of the soft, pale, moist surface, the hot, tense, dusky skin of well-developed erysipelas. I have, up to date, handled eleven cases of the disease after the manner set forth above, and have yet to be disappointed in a single instance. The cases have included, besides the facial type of the disease, three cases of traumatic erysipelas, and I am inclined to think that, if anything, the success of the treatment was more fully demonstrated in the last-named cases than in the so-called idiopathic variety. I would like to receive a report of cases in which there has been a failure to effect a prompt cure after pursuing the wet-dressing treatment.

Preventable Deaths.—A statistician of Moscow has estimated, from a study of the death returns of the States of Europe, that at least forty per cent. of the inhabitants of that portion of the world die of preventable infectious diseases.

MALARIAL INFECTION.

By A. SCHIRMAN, M.D.,
NEW YORK.

During a residence near the Russo Persian boundary beyond the Caucasus it fell to my lot to see a great deal of intermittent fever. Malarial diseases in that region are very similar in their symptoms and course to those endemic in many parts of the American continent. My experience there and elsewhere has led me to regard the presence of potted plants in living apartments as productive of much malarial fever. It has been abundantly shown that this disease prevails often in places which are free from swamps or any bodies of standing water. All that is necessary to the propagation of the malarial poison is a small quantity of moisture in the soil and a vegetable growth in somewhat high temperature. The development of the poison is arrested when the air does not penetrate the soil and when the average temperature is not high. Both excessive dryness and excessive moisture seem to be inimical to the propagation of malaria. The cities of Vladi in the Caucasus, of Susal, where is the grave of Haman, and of Erinan, near Mt. Ararat, and their environs are noted for excessive heat and moisture and a great variety of vegetable growth. During my practice in these cities I often had occasion to observe that malarial fevers were more prevalent on days following a warm rain, and especially among those living in unsanitary dwellings where there were many plants and much decaying animal and vegetable matter. The relation between house plants and malaria was well shown in a case seen by me in Moscow. A woman from the Caucasus, who had always enjoyed the best of health, was taken ill with intermittent fever. She was treated for the fever and soon recovered, but another paroxysm occurred soon after she began to go about the house. After a succession of these attacks I made an investigation. I found that she had a large number of plants in a sitting-room which was well heated but not ventilated. She was very fond of her plants and passed the greater part of her time in this room, but during the attacks of illness remained in her bedroom, which was large and well ventilated. I insisted upon the removal of the plants from the house, and from that time the attacks ceased.

PERMANGANATE OF POTASSIUM AS AN ANTIDOTE FOR RATTLESNAKE BITES, A RECENT CASE.

By F. W. MALONEY, M.D.,
ROCHESTER, N. Y.

About three months ago, a Mr. P. G——was bitten on the right middle finger by a fair-sized rattlesnake which he was handling at the time.

He immediately put the snake back in the cage, and applied suction with his mouth to the wound, this was continued for about fifteen minutes, when he used a strong solution of ammonia. At the end of half an hour the finger began to swell. He tied a string on the finger above the bite, but the swelling continued, in two hours it had reached the wrist; he then removed the string and made an incision through the wound with his pen-knife. After partaking of a large drink of whiskey he set out to obtain medical aid. Not finding the person he desired he went to the City Hospital, where the house surgeon made several free incisions on the finger, hand, and forearm, as by that time the swelling had extended as far as the elbow-joint. The wounds were then dressed with iodoform gauze, and bandaged.

The free bleeding relieved the pain and some swelling. The after treatment was dressings, changed every day for four weeks; when all the wounds were healed he had no constitutional symptoms, as the swelling did not go beyond the elbow-joint.

I read Dr. Moor's article in the Medical Record stating the antidotal properties of permanganate of potassium in morphine poisoning, and a short time afterward another article on a case of snake poisoning treated by permanganate hypodermatically. I suggested the idea to Mr. G—— and he said he would get it, and be prepared in case he was bitten again. He secured a hypodermic syringe and some permanganate of potash; taking a two-ounce bottle he made a dark purplish solution of the permanganate. He also has a rubber bandage he keeps in the same box with the syringe and solution. These are near the case which contains the rattlers.

An opportunity presented itself on Friday afternoon September 28th, by which he clearly demonstrated the value of permanganate of potash as an antidote to rattlesnake poisoning.

Mr. G—— very often exhibits the fangs of a rattlesnake to the visitors of his place. This he does by catching the snake just behind the head with one hand, and by a sort of tongue depressor opens the mouth of the snake with the other. This day the snake might have been a little hungry, and while handling it Mr. G—— felt a sharp sting in the joint of the left index finger; he dropped his pet back in the cage, and reached for his syringe and solution; an assistant filled the syringe while Mr. G—— tied a string round the finger above the wound. He then injected the solution into the finger near the bite. In a few minutes the finger began to swell, and when the pain became severe he used the rubber bandage at the wrist and loosened the string, and again injected another syringeful of the solution. There was no further swelling and very little pain. In two days there was no sign of the bite; he used the finger as usual. He stated that he was more at home now than ever with the rattlers.

PREGNANCY; CONTRACTED PELVIS; DOUBLE DERMOID CYST; PORRO'S OPERATION. RECOVERY OF MOTHER AND CHILD.[1]

By NEIL MacPHATTER, M.B.C.M., L.R.C.P. Edin.,
DENVER, COL.
PROFESSOR OF CLINICAL GYNECOLOGY IN GROSS MEDICAL COLLEGE; GYNECOLOGIST TO ST. ANTHONY'S HOSPITAL; FELLOW OF THE BRITISH GYNECOLOGICAL SOCIETY.

I believe the part assigned to me for discussion this afternoon is a consideration of the unusual methods or extraordinary measures that may be legitimately resorted to in difficult parturition, when the difficulties assume such proportions that the woman cannot be delivered by any of the ordinary means. My sphere is limited to a still narrower margin than this, for I have been requested by the gentleman who so kindly invited me to participate in this discussion to endeavor to confine my remarks more particularly to that part of the obstetric art which calls for the use of cutting instruments, *i.e.*, when there exists such a disproportion between the natural passages and the size of the fœtus as to render it absolutely impossible for the child to be delivered in the ordinary manner. Here we come upon a peculiarly interesting and tremendously responsible situation, for it is one in which the lives of mother and child are placed in imminent jeopardy, and one that calls for the most evenly balanced judgment on the part of the attending physician. In the remarks to which I give expression I trust I shall approach the subject free from the thralldom of preconceived ideas and unbiassed in the advocacy of any one method of procedure only in so far as the merit of such a method demands.

Fortunately for mankind, more particularly for those who are obliged to bear the burdens and dangers of parturition, nature in her own inimitable ways and by ordinances that far surpass in beauty and perfection of design the imagination of man, is usually quite competent to fulfil this trying ordeal. Occasionally, however, the pelvis of the mother or unnatural development on the part of the fœtus may render it absolutely impossible

[1] Read before the Colorado State Medical Society, June 19, 1894.

for the woman to be delivered normally, and it is here that the cunning hand of the surgeon may be of the utmost importance to life. It is highly commendatory to the standing of the profession at the present time that the principles we advocate have been so beneficial to mankind. The method in vogue not many years ago of resorting to the operation of craniotomy, with the appalling disasters that followed in its wake, forms one of the darkest pages in the history of obstetrics. When one contemplates the frequency with which this operation was resorted to in preference to others much less dangerous, it would seem that the spirit of scientific midwifery was long lulled to sleep and that nature had become emasculated. The operation of eviscerating the yet warm and quivering body of an innocent babe from its mother's womb should be reserved for very rare and exceptional cases, such as hydrocephalus, or where the child is already dead. Much more satisfactory and humane methods are the Cæsarean section and Porro's method of operating.

Porro's operation, unlike the majority of recent triumphs in surgery, is not one which has been resuscitated after having been performed and discarded many years before, but is of comparatively recent origin. The first successful case on record was performed in the year 1876 by Porro, of Batavia. It has since been performed a great number of times with comparatively good results. Heretofore, and even at the present time, this operation and the Cæsarean section had been indiscriminately advocated when the condition present called for one or the other method. I believe this to be a mistake. Whether the Cæsarean section can have any advantages over its recent rival rests wholly upon a question of morals. Certain it is that there are well-defined conditions and complications in pregnancy when Porro's method is the only scientific course to pursue.

Each method may possess well-defined advantages over the other, and in estimating the relative values of Porro and Cæsarean sections a number of important conditions should be remembered. In all cases where pregnancy is complicated by tumors, such as fibroid of the uterus, ovarian, or dermoids, as was the condition in this case, hysterectomy is the preferable operation. Where labor has proceeded for a long time and the uterus becomes putrid, Porro's operation ought to be the one selected. In certain operations begun as Cæsarean sections, but which become complicated by difficulties in the detachment of the placenta, uncontrollable hemorrhage, or complete atresia of the vagina, Porro's is the operation indicated. These are some of the advantages that this operation possesses over the classical one. In straight, uncomplicated cases I doubt very much if the Cæsarean method is superior to the Porro. The advocates of the Cæsarean section maintain that because Porro's operation forever renders the woman sterile, the Cæsarean method has the advantage. This question again is one altogether of morals; but given a woman with a deformed pelvis and a contraction of its diameters so that one or the other operation was absolutely demanded, and believe the fact that one would save her life equally as certain as the other, the one that would place her in such a condition that pregnancy could not again occur would be the preferable one. I look upon this point alone as a decided advantage of Porro over its rival. Such a proceeding would leave the life of the mother absolutely free, so far as any future chances were concerned. I am well aware that this is at variance with the opinions of many able minds, but nevertheless it is one that I have long maintained, and is at least one of honesty.

There can exist no reason why this operation, if properly planned and carried out with as much care and precaution as other abdominal sections, should not be almost entirely free from risk, as far as the lives of mother and child are concerned. It is to be regretted that in a great majority of instances the idea of the operation does not enter into the head of the physician until the patient becomes almost entirely exhausted from the reiterated efforts of the uterus to expel the fœtus. An operation of this character above all others should be done opportunely and not left until the rough manipulations have exhausted the woman and materially reduced her chances. It can readily be understood why the mortality of this operation has remained so high in view of the fact that it is usually done as a forlorn hope.

An operation that has recently sprung into prominence, and one that is receiving considerable attention, is that of symphyseotomy. This method of delivery is not of recent origin, but is one that was described and advocated by a French medical student as far back as the year 1768. At first his method was received with incredulity and doubt, but subsequently having performed the operation successfully upon a woman who had previously given birth to four dead children, his method was at once admitted and he became the recipient of much adulation and marks of esteem. He was looked upon as the benefactor of mankind, and the neglected student became in the eyes of the nation an illustrious personage. From that period the operation seems to have lapsed into neglect until recently revived.

The conditions calling for this method of operation are necessarily limited. It is only in slightly contracted pelves that any benefit can be looked for, and the necessity for Porro's method or the classical Cæsarean section will begin where the operation of symphyseotomy ends. In well-marked contracted pelves this operation gives way to the suprapubic methods, and finds its advantages in such cases where the question of premature labor may be meditated.

Whether this operation will ultimately supplant the necessity for inducing premature birth, will rest with the future. At present, according to the most recent arguments, it is frequently beset with disastrous results, sufficient to raise a doubt of its surviving. The most frequent risks seemingly are septicæmia, hemorrhage, ossification of the symphysis, laceration of the bladder, with fistulæ, and prolapse of the vagina.

On August 16th I was called in consultation by Dr. E. J. Rothwell to see a patient who was eight months and a half pregnant. The history given was that she was thirty-two years of age, had always enjoyed good health, and had been delivered of twins a few years previously by Dr. E. J. Rothwell, weighing three and a half pounds each. Dr. Rothwell at that time noticed the condition of the pelvis. She afterward became pregnant, and after the repeated effort of days Dr. Rothwell removed the child by craniotomy. She was confined to her bed for three months afterward. Upon examination the cervix was so high that I could not detect it with my finger; I could, however, make out that the fœtus was alive and that it was in the fourth position. It was of large size, and we felt certain it was physically impossible to deliver the patient by the normal channel.

This we explained to her and her husband, and advised the removal of the child by abdominal section as the method attended by the least risk. The following were the pelvic measurements: Between anterior-superior spines, 9¾ inches; between crests of ilia, 10 inches; conjugate vera, 3½ inches.

A few days subsequently she was removed to my private hospital on Vine Street and was prepared for the operation. We decided to operate several days before the expected time of labor.

Thursday morning, August 23d, she was put under the influence of an anæsthetic by Dr. Leavitt. The abdominal incision was made in the median line and was continued above the umbilicus. Any bleeding points were caught up by pressure-forceps and secured. The transversalis fascia was cut through to the full extent of the abdominal wound. The subperitoneal fat was caught between two pairs of forceps and gently cut, layer after layer, changing the forceps for a deeper layer as each one was cut. This process was continued until the peritoneum was opened and the uterus bulged forward into the wound. Whether to apply the temporary ligature before raising the uterus from its position, as is re-

commended by the majority of operators, or doing so afterward, as advocated by Müller and others, is yet under discussion. In this case I decided upon the latter alternative, for the reason that it can be more properly adjusted and the risk of including a loop of intestine or a piece of omentum under the rubber is obviated. The increase in abdominal incision is more than compensated by the advantages gained.

Before the incision into the uterus was begun, several warm, flat sponges were placed between the uterus and intestines, for the double purpose of keeping them from cooling and preventing fluid from escaping into the abdomen. The incision was vertical, beginning near the fundus, cutting toward the cervix about four inches. I went carefully through the whole extent of the incision, layer after layer, until I came to the membrane, which was intact. The uterine walls retracted, exposing the fœtus as through tissue paper. I ruptured the membrane and the uterus contracted, the child entered the world head first, crying lustily, and was turned over to one of the attending nurses. Here I was confronted by the unexpected complication of two dermoid tumors of the ovaries, and decided to remove them also, together with the uterus. As in hysterectomy for fibroid tumors of the uterus, experience has taught us that the extra-peritoneal method of fixation of the pedicle is the one followed by the most favorable results. The simple method of converting the temporary elastic ligature into a permanent one is as good as any, and saves time. The pedicle was now fixed in the lower part of the wound after all clots were removed from Douglas's cul de sac. In order to prevent the pedicle from retracting, a staple was passed through it, immediately above the constrictor. The peritoneum was then sutured separately. The deep sutures to close the abdominal wound were inserted subsequently. Stitches were inserted as in other abdominal sections and the wound dressed. The patient made a very satisfactory recovery. Her temperature remained normal for nearly two weeks. She and her baby, as you may see, are enjoying the best of health.

405 California Building, Seventeenth Street.

PERMANGANATE OF POTASSIUM IN MORPHINE POISONING.

By HILBERT B. TINGLEY, M.D.,

Rockaway Beach, N. Y.

On July 30th I was hastily summoned to see baby C——, eighteen months of age, who had taken two morphine pills, one-quarter grain each. On arriving at the house I found the child still conscious with pupils contracted almost to pin point and as it was about 8.30 P.M. I decided that I had an excellent case for the trial of permanganate of potassium. I sent across the street for the bottle of permanganate in the drug store immediately opposite, and gave about one grain at once, and as I wished to give this drug a thorough trial, gave no other medicine, not even an emetic. About 11 P.M. I allowed them to put the child to bed, as it was then two hours later than its bedtime, but before they did so, I gave about one grain more of the permanganate. During the night the child had some delirium of a wild nature and had little sleep, but next day appeared none the worse for its overdose of morphine. The result has given me great faith in this drug in these cases.

To Elevate Woman.—A writer in an ethical journal has a new idea for the benefit of women. It is that men and women should deliberate together and establish a rule that the woman's child bearing years should be very much reduced in number, also that they should agree to allow a longer period between the birth of children. The lady does not go into particulars, so we are unable to give the details by means of which these reforms are to be made effectual.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 18, 1894.

D. B. St. John Roosa, M.D., President, in the Chair.

Reports.—Dr. A. B. Judson, statistical secretary, and Dr. M. Allen Starr, corresponding secretary, presented reports. The recording secretary read a written report from the Committee to the State Constitutional Convention, presented by its secretary, Dr. W. R. Pryor, a synopsis of which has been published. Allusion was made to the necessity for a committee on legislation, and the President said he would at some other time gladly entertain a motion to appoint such a committee, as he felt there was great need of one in order to prevent the passage of bad laws relating to medicine, as well as to urge the passage of good ones. It was desirable, however, in case there were any who might oppose such a motion, to first give notice of its introduction, in order that all might have a chance to vote on it as their consciences dictated. But the fact could not be repeated too often that the profession must make its wants known if it would have them granted.

Defective Vision, in its Relation to Crime.—Dr. Frank Van Fleet read a paper bearing this title. He believed the human race had not altered since the beginning; that, at any rate, there had been no change since the earliest time known to history. At one time man roamed over the globe in herds, there being no family ties, no laws, consequently no criminals. As people multiplied, it became more convenient to settle, to live in towns, and in families; to have laws; and these being violated, crime came into existence. There was a change of environment, not a change of man. Heredity was a misnomer. Everything was due to environment. One who could control the education and environments of a child could make of it what he pleased. An English child put in Germany, and taught only German, would grow up with no English characteristics, and differ in no way from German children. If one were to expect criminals to beget criminals, he should also expect intellectual persons to transmit to their offspring greater intelligence than those not intellectual. The author asserted, however, that the only influence which good parentage could have was to give better training and set a better example during the developing period; the sole influence of criminal parentage was the bad example set during growth.

Man received his education through the senses. Any of these might be defective, and warp his view of things, or interfere with the race of life. But it was with defective vision that the author was concerned. His idea of the way in which this produced criminals seemed to be chiefly, at least, that it detracted from the individual's power to compete with his more fortunate fellows. Mention was made of the fact, however, that defective vision might cause one to take a warped view of things. Examination of the eyes of a part of the juvenile delinquents on Randall's Island, led him to think there was defective vision in a larger percentage of these persons than the average. Ocular defects should be corrected as far as possible, and those which were acquired, such as ophthalmia neonatorum, should be prevented or arrested at once. A certificate of ocular examination and proper treatment was more important than one of vaccination among school children.

The discussion was opened by Dr. H. D. Chapin, and continued by Drs. Joseph Collins, Frederick Peterson, John E Weeks, the President, and the author. As far as the gentlemen expressed their views, all disagreed with the author, except with regard to the importance of attention to defective vision wherever it existed.

Drs. Collins and Peterson especially criticised the stand taken with regard to the overwhelming influence

of environment as compared with heredity, and failure to refer to any other authority than an article by a police superintendent, when so many scientists had studied and written upon the subject. Dr. Peterson had observed that eye troubles were very common among the Egyptians and Arabs, while crime was extremely rare.

Dr. Weeks thought the author had adopted a very superficial way of examining the eyes at Randall's Island institution, considering the point which he was trying to prove. The fact that more than half of those examined had been found to have defective vision was not astonishing, when it was remembered that astigmatism was present in about two thirds of all persons, while perfect vision was very rare. In his opinion defect of vision was not more productive of crime than defect of any other sense.

Dr. Chapin spoke feelingly of the want of accommodations in the eye hospitals and other institutions in the city, for children suffering with inflammatory eye troubles, especially those of a contagious nature.

Dr. Weeks and the President said this was not the fault of the existing ophthalmic institutions, but of the city officials, in failing to provide hospital accommodations for these patients. Dr. Weeks had found it possible to cure nearly all of the cases at the out-door department, where the mother followed instructions and brought the patient back for treatment daily.

SECTION ON GENERAL MEDICINE.

Stated Meeting, October 16, 1894.

William H. Porter, M.D., Chairman.

Case of Sporadic Cretinism. — Dr. Morris Manges presented a case of sporadic cretinism which had once been on exhibition in a dime museum and had once been demonstrated before a medical meeting by Dr. Leszynsky. The subject was a male, twenty-five years of age, forty-nine inches in height, weight sixty-eight pounds. He was born of healthy parents in Posen; the father was six feet in height, the mother of ordinary size. Other children in the family were healthy and normal. When carrying the child the mother had hæmoptysis. She described him as a little old man when born. He was always dull and stupid. The eyes were small, the forehead small, the bones prominent, the folds on the forehead deep, the scalp loose, the gait waddling, the hair dry and wiry, thyroid gland apparently absent. Before treatment with thyroid extract there was some infiltration of skin, particularly of eyelids. When irritated, the boy used vigorous language. Since beginning treatment with thyroid extract over two months ago there had been loss of nine pounds in weight, the eyelids had lost their œdematous appearance, the voice had become less stridulous, the patient gave more attention to his surroundings, the daily excretion of urea had increased from 0 8 to 1.2 per cent. It was very doubtful, however, whether at this late date the thyroid extract could manifest curative properties or do more than somewhat ameliorate the patient's condition.

The speaker expressed surprise that so few cases of sporadic cretinism had been reported in this country, the whole number since Osler's first paper a few years ago amounting only to sixteen, whereas it was pretty certain that a good many cases were in existence.

Among the preparations of the thyroid gland which had been tried on this patient were those of Parke, Davis & Co., of Armour, and of Burroughs, Welcome & Co. The latter had given the best results with the least disagreeable effects. Twenty-five grains were now being taken a day.

Dr. George W. Crary, to whose case Dr. Manges had referred, said that since the publication of his case he had received letters regarding sporadic cretinism from all over the United States, which showed that the condition was not rare, notwithstanding the paucity of the reported cases. By the use of the thyroid preparations we could easily get rid of the glandular growths, could render the skin moist, and produce certain general improvements in the patient's condition within a short time, but it had not been at all decided that we could cause these diminutive persons to go on and develop into complete human beings. He had been disappointed in the slowness of the improvement in his case. It was quite different, however, with myxœdema, in which condition the agent possessed wonderful curative properties. Like Dr. Manges, his experience with other preparations of the thyroid gland, including that which he had himself for a time made, had been less favorable than with the tabloids of Burroughs, Welcome & Co. Unlike the former, the tabloids did not cause rise of temperature and disagreeable effects upon the gastro intestinal tract, and the dose with these was determined by the frequency of the pulse instead of by the temperature.

One of the staff at the Vanderbilt Clinic said they had been treating a child there a few months with thyroid extract, and it had shown marked improvement.

Dr. Caillé had seen some cases treated by thyroid preparation, but could not say that there had been special improvement.

Early Local Treatment of Diphtheria and other Affections of the Throat.—Dr. Francis H. Williams, of Boston, read the paper. It was based on studies in diphtheria in the hospital at Boston; also in private practice. It was assumed that at the beginning diphtheria was a local disease. These studies had shown the value of bacteriological examinations of the juices in the throat in making an early diagnosis, especially in apparently healthy members of a household in which there was one known case of diphtheria; of determining whether the patient had become fully convalescent; of the efficiency of treatment by its destruction of the bacilli. All patients, however, should be warned of the possibility of communicating diphtheria even after bacteriological examinations had ceased to show bacilli or diphtheria.

A few years ago the author had become convinced that many local treatments were useless or injurious, and to determine what was best turned to the laboratory. Many germicides, while capable of killing the germs, did so only in poisonous doses to the patient or by injuring the local parts. He found peroxide of hydrogen a weak germicide in ordinary strength. He then found that the efficiency of this agent was increased by the presence of an acid. The two mixed acted more strongly as a germicide than either did separately. The preparations in the market were not reliable either as to the strength of the peroxide or of the amount of acid which they contained. He made careful study and found that where the membrane was thick and the case severe a fifty-volume solution of the peroxide was not too strong if one would disintegrate the membrane and reach all the germs. For the hydrogen dioxide acted not only as a germicide, but was specially valuable as a disintegrator of the false membrane. The paper contained a series of cases, showing that the fifty-volume solution was more efficient than the ten, and that where the former was used the throat was free of germs of diphtheria and other germs by about the fourteenth day, as against the twenty-seventh day where the weaker solutions were used. Of course the persistence of the germs varied with the severity of the case. The strength of the solutions which he now used varied from twenty-five to fifty volumes, according to the severity of the case. In a few days the bacilli were found much diminished in number, and he was strongly inclined to believe that where the Klebs-Loeffler bacillus was present after the tenth day under this treatment it was due to its being concealed in some crypts, or other hiding-place, and should be sought out carefully. In some cases membrane remained after the Klebs-Loeffler bacillus had disappeared, and was due probably to the presence of the staphylococcus, which was not so easily killed, and required the use of some other germicide, as chlorinated soda.

Dr. Williams had used the stronger solutions of hydro-

gen dioxide in one hundred cases of diphtheria, of varying severity, in all the diagnosis having been confirmed by bacteriological examination. It did not injure the mucous membrane. It could be used along with other compatible germicides, or alternately. It should be used early and until the germs disappeared. Applications every hour or two. The operator should always see the parts when making the applications. Use a spray, not more than six pounds pressure. An ingenious apparatus was exhibited for spraying the liquid. All gentleness should be observed, and then harm would not be done, and the patient would call for the treatment, since it cleansed out the throat and nose and made breathing easier.

Dr. George L. Peabody being called upon, made a few remarks, but said he did not see enough cases of diphtheria to speak with authority on local treatment. The author had properly emphasized the importance of early diagnosis and treatment, whatever the treatment might be, if it were only beneficial.

Peroxide of Hydrogen Found Injurious.—Dr. A Caillé mentioned the following facts: diphtheria is endemic here; some years it is more plentiful than others; it may be a mixed infection, and may kill by the presence of either the streptococcus or the diphtheria bacillus; every local abrasion favors the development of the germs, which may be present even in seemingly healthy throats; prophylaxis by attention to the teeth and mild germicides and cleansing of the throat and mouth should be observed. Regarding peroxide of hydrogen, Dr. Williams's experience had not been in harmony with that of New York physicians. Beginning with the meeting of the American Pediatric Association in Boston a few years ago, the profession had given expression to its experience that peroxide of hydrogen applied to the throat in diphtheria caused irritation, gave rise to new patches of membrane, and made the case more formidable than it had been before. It seemed impossible to apply chemical antiseptics to the mouth and naso pharynx without doing injury, and he had come to content himself with gentle mechanical removal and cleansing by mild solutions of salt, boracic acid, or pure water, through the nose.

Impossible to Disinfect the Air-passages.—Dr. W. H. Park said he would only give his personal experience, and remarked that it was seldom that any two persons agreed in all respects. At Willard Parker's they had tried whether it was possible to completely disinfect the air passages, using even strong solutions of bichloride and other agents for twenty-four to forty-eight hours, in some persons who had no membrane in the throat, in others in whom a membrane was present, but in no case could they make the throat perfectly aseptic. In a certain number the Klebs-Loeffler bacillus did disappear, but in others they were as numerous as if nothing had been done. Even if the membrane quite disappeared from view, germs would still remain and cause its development elsewhere. He hoped to hear from Dr. White, who had carried out treatment at Willard Parker's to test the comparative value of bichloride, of peroxide, and of simple salt solution. Bichloride, 1 to 2,500 in the throat, 1 to 4,000 in the nostrils was used in one class, peroxide of hydrogen up to twenty-five per cent. in another, salt solution in a third. In all, the bacilli persisted about the same length of time, or even longest where the strong solutions were used. As to results, Dr. White had noticed little difference.

It was very difficult to apply a swab without injuring the member. They now tried simply to use a cleansing solution, and to avoid irritation. He had been told by Dr. White that very rarely did an adult or a person over ten years old die of diphtheria.

Dr. Joseph E. Winters also thought that Dr. Williams's experience with peroxide of hydrogen was entirely different from that of physicians in New York. In fact the frequent use of the agent increased rather than diminished the symptoms. He regarded it as impractical to use any spray or atomizer in diphtheria in a child; as to adults, they almost always recovered, as Dr. Park had stated. It seemed to him that he could not resort to any form of local treatment in the mouth of a young child suffering from diphtheria without running contrary to the first indication in the management of these cases, namely, not to exhaust the patient.

Experience at Willard Parker Hospital.—Dr. White, resident physician at the Willard Parker Hospital, said that his experience with peroxide of hydrogen in diphtheria at that institution had been very unfavorable. All the cases showed some signs of irritation from the peroxide. His remarks confirmed those of Dr. Park with regard to the danger of irritation in local treatment of the mouth in children and with regard to the rarity of death in adults with diphtheria. Cleansing with plain water or normal salt solution was best.

Dr. A. Jacobi dwelt upon the danger of making local wounds in diphtheria of any size or nature, as they absorbed diphtheritic poison very rapidly and formed new centres of infection. For twenty or thirty years he had impressed the danger of wounds in the throat in times of diphtheria. Bacilli were ubiquitous. The discussion at the American Pediatric Association referred to by Dr. Caillé, regarding the dangers incident to irritation caused by peroxide of hydrogen, was based on a paper presented by Dr. Jacobi. A striking example in which the continued use of this agent had prevented perfect convalescence and caused renewed attacks of diphtheria, was that of a child which the speaker had been requested to see in consultation with Dr. Caillé. He advised discontinuance of the peroxide, whereupon the child got well.

Dr. Jacobi used only physiological salt solution, or possibly mild boracic-acid solution, or lime-water, introduced gently through the nose. It was criminal to bore into the mouth of a child and try to pry open its jaws while it was struggling and becoming exhausted. Besides the affected parts could not be reached in that way, while they could through the nose.

Dr. Williams, in some concluding remarks, reiterated the points in his paper, that the peroxide must be strong, it must be acid, and the treatment must be carried out with gentleness. Only the remarks of Drs. Park and White had a real bearing upon his paper, for they alone had used a strong solution of peroxide, but that was neutral, and therefore not efficient.

An Ectromelic Monster.—Dr. A. Schirman, of this city, writes concerning a monstrosity which he saw about two years ago in Baltimore. He was called to attend a woman in confinement. The child, a female, was born dead. The frontal bone was undeveloped, the parietal was flattened, the occipital was horizontal in position, the temporal bones were very prominent. There was a cleft palate, and the narrowed cranial cavity contained no hemispheres. The mother was about thirty years of age, and had given birth to several healthy children and to two with cleft palate and hare-lip. No dissection of the monster was allowed.

The Way of the Health Officer is Hard.—In Brooklyn there has been much dissatisfaction expressed in some quarters with the health officer, and a petition for his removal was circulated, and obtained a number of signatures of those who thought he was too strict in enforcing quarantine and vaccination during the prevalence of small-pox. In Detroit the health officer has been deposed because it was said that he was too lax in enforcing quarantine and vaccination during the prevalence of small-pox. In Milwaukee, also, impeachment proceedings have been begun in the common council against the health commissioner, for the manner in which he handled the small-pox epidemic in that city last winter. It is not said whether he is accused of being too severe or too lenient. The sanitary *via media* is a very narrow path, apparently.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

OLIVER WENDELL HOLMES—OBSTETRICAL SOCIETY—ABSCESS OF OVARY—MEDICAL SOCIETY OF LONDON—THE PLEASURES OF MEDICINE AND SURGERY—BERIBERI—CHELSEA HOSPITAL SCANDAL—MEDICAL DEFENCE UNION—SMALL POX—DIPHTHERIA—DEATH OF MR. BUNCH—SIR JAMES PAGET AT THE ABERNETHIAN SOCIETY—THE CLINICAL SOCIETY'S FIRST MEETING—SMALL-POX—DIPHTHERIA.

LONDON, October 13, 1894.

My first word this week must be to express the sense of loss we feel here in the decease of Dr. Oliver Wendell Holmes. England, as well as America and all English-speaking countries, were delighted by his genius, and medicine may well be as proud of him as literature. Since his last one hundred days in Europe he has been, if possible, more one of us than ever, and his death is the one talked of topic of the week among medical and literary men.

The Obstetrical Society was the first to meet this year, and set to work with a full programme on October 3d. Specimens were exhibited of tubal abortion and of pregnancy in a rudimentary uterine horn, by Dr. Remfry; of myoma removed by abdominal hysterectomy, by Dr. Cullingworth; of fibro cystic tumor, by Dr. Lewers; and the following by Dr. Duncan: dermoid of left ovary with pedicle twisted from left to right, cystic sarcoma of omentum, sarcoma of ovaries, and malignant disease of omentum. There were some interesting remarks on these specimens by Mr. Bland Sutton and others. Dr. Cullingworth read the paper, which embodied three cases of pelvic inflammation attended with abscess of the ovary and some clinical remarks on the terminations of such abscesses, the illusory character of temporary subsidence of the symptoms in some cases of severe pelvic inflammation. He said that an analysis of eighty three cases, in which he had performed abdominal section for non-cellulitic pelvic suppuration, showed that in a large percentage there was ovarian abscess which was, next to salpingitis, the most frequent form of non-cellulitic suppuration. Dr. Galabin supported the view held by the author, that the suppurative inflammation was communicated from the tube to the ovary, but this was controverted by Dr. Hayes, and Dr. Griffith believed that the ovarian suppuration was usually the result of septic inflammation of the broad ligament. Dr. Lewers recalled a case in which he found the inflammatory process between the layers of the broad ligament in the stage of phlegmon, but in the adjoining ovary a small abscess containing about a drachm of pus. The president (Dr. Herman) mentioned two cases differing somewhat from Dr. Cullingworth's, one of which showed the chronicity of the process, and proved that with our present knowledge the patient might have been saved twenty years of suffering.

The Medical Society began work on Monday last, when the president (Sir William Dalby) delivered an address on the "Pleasures of Medicine and Surgery," in which he proposed to show that our pursuits may so occupy us as to raise them to an art in its highest sense, and will then give us all the delights which art gives to its votaries. He limited the pleasures to mental processes, excluding those of sensation and, therefore, those which appeal to the eye and the ear. The exercise of the imagination, he said, was one of the greatest pleasures, and he saw in some the enthusiasm of the explorer, and gave illustrations from both medicine and surgery. The activity of the imagination is the mark of genius in poets and artists. If the mental processes are the same in one who establishes a great advance in medicine, should he be denied the attribute of genius? He wished to place our art side by side with literature and the arts, and held that it is worth cultivating not only for its utility but for the pleasure of those engaged in it. Poetry and literature give pleasure of two kinds, emotional and intellectual, and although in some instances they are both operative, there are forms of literature of which the enjoyment is purely intellectual, the emotions remaining untouched. So he claimed for medicine a family relationship with the arts and literature, and a share in the intellectual pleasures they give.

The outbreak of beriberi in the Richmond Asylum, Dublin, continues. There have been 149 cases, of which 17 have died. Possibly some other cases have occurred, for in some of these it came on so insidiously that it would have, perhaps, been overlooked but for attention being directed to the epidemic. Some army surgeons who have seen beriberi in the East have visited the asylum and they observed differences in the clinical manifestations of the Dublin cases, but these they seem to think may be accounted for by the difference of climate. If the disease is really beriberi it has for the first time obtained a footing in these countries. Some cases have, indeed, been brought in ships, but it has never spread. Yet this outbreak at Dublin, whatever it may be, has spread very rapidly. This is attributed to overcrowding, always an important point in this disease, and temporary hospitals are being erected to relieve this.

On Wednesday last (October 10th) there was a general meeting of the Governors of the Chelsea Hospital for Women, when the committee gave a report and offered their defence and resignation. Some sarcastic criticisms were offered on the conduct of a Board which had been publicly condemned proceeding to elect a new staff and offer suggestions for improved management. This Board actually asked for power to suspend or dismiss any medical officer who had acted in a manner detrimental to the interests of the hospital. What this means is obvious from the declaration of the Chairman that some of the staff who had not been re elected had injured the hospital by circulating a statement of their own defence. And yet men are to be found ready to accept this ignominious position with the glaring fact of the injustice to their predecessors confronting them. And we call ourselves a united profession and prate about ethical conduct!

The Board also announced their intention of appointing consulting physicians of eminence from those who held office at the general hospitals. Now Sir Spencer Wells, Dr. R. Barnes, and Mr. Hutchinson were the consulting officers. They have resigned and evidently in disgust. It is well known that they disclaim any part in the election of the new staff, and condemn the conduct of the Board in proceeding to the election. If this condemned Board can find obstetricians attached to general hospitals ready to succeed these celebrated consultants, such fresh consultants ought to be ostracized by the rest of the profession.

Notwithstanding the conduct of the Board a resolution was carried not to accept their resignation—so the hospital is left to the same management which has been condemned in two special reports as well as by the Home Secretary—a strange comment on our methods of management and an agreeable prospect for the physicians who are willing to accept appointments terminating yearly as the humble servants of such a Board.

Meetings of members of the Medical Defence Union have been held in London, Manchester, Birmingham, and Bristol to discuss the steps taken by the council in the litigation respecting Drs. Bloxam and Collie. At these meetings suggestions were offered as to the avoidance of such litigation in future, and at each meeting confidence was expressed in the council. So we may hope that controversy is closed. It is a pity that all concerned in medical defence do not unite their forces.

Small-pox has abated lately, but diphtheria has increased. This last disease has carried off another promising young member of the profession, Mr. F. V. Bunch, F.R.C.S., Surgical Registrar of University College Hos-

pital, who contracted diphtheria from a patient in the wards and died on the 5th inst.

LONDON, October 19, 1894.

Sir James Paget opened the one hundredth session of the Abernethian Society on the 11th inst. with one of his felicitous addresses. He said he was not aware that it was the centenary of the Society or he might have prepared some account of its history. It was quite as well that he did not, though he would, I doubt not, have been able to make the dry bones of such a history live. He said it was sixty years since he joined the Society. It is rather rare certainly for anyone to address a society after sixty years' membership, though I believe outside the profession this from time to time occurs. Sir James repudiated the notion that a man could not be a scientist and general practitioner at the same time, and urged his audience to add well-observed facts to the general store, illustrating the necessity of this by myxœdema, first observed twenty years ago when little was known about the thyroid gland, but the result of that observation was now a larger knowledge of the thyroid than of many other organs. The questions as to relations of mixed diseases were brought forward and tuberculosis and cancer named as to which facts were needed. Then the fallacies of diagnosis were spoken of, and as they might lead to unexpected actions of drugs, a natural transition was offered to the subject of therapeutics. Then Sir James urged that all the sciences must work together not as enemies or rivals perhaps, but the practitioner must avail himself of the knowledge afforded by all without allowing himself to be unduly influenced by any one of them.

But I need not give any further account of the address. Suffice it to say that Sir James received on the occasion one of those enthusiastic ovations to which he has long been accustomed, and that the crowded audience seemed more than usually delighted.

The Clinical Society of London opened the session Friday last with distinctly practical work. Dr. J. M. Bradford related a case of aneurism of the basilar artery. On admission, at 7 P.M., the patient was partially unconscious, axillary temperature, 98° F.; pulse, 70, irregular and intermittent. No paralysis. Respiration, irregular. Abdomen not retracted. Pupils equal and medium sized. Deep reflexes increased. Patient rather restless. At 9 P.M. he became comatose, and the respiration became infrequent, ceasing at 10 P.M. Artificial respiration was kept up for four hours, but the pulse then failed, and he died at 2 10 A.M. Temperature at midnight 97° F. No convulsions occurred. Autopsy showed numerous gummata in the liver and a fusiform aneurism of the basilar artery, which had ruptured, the extravasation forming a blood-clot one-fourth of an inch thick on the under surface of the pons and medulla, and extending round the sides of the medulla into the fourth ventricle.

Dr. W. Hale White described two cases of intra cranial aneurism. The first was that of a woman, aged thirty-four. There was a large amount of clot on the under surface of the brain, it extended to the fourth ventricle and was one-eighth inch thick all down the spinal canal in the subarachnoid space. The second case was that of a man who suddenly fell down insensible and was brought to the hospital. On admission he was unconscious, the pupils were fixed and dilated, the eyeballs were prominent. The breathing became difficult and he died seven and one half hours after admission. Blood clot was found in both the subdural and subarachnoid cavities nearly all over the surface of the brain; and it had extended along the sheath of the optic nerve, ultimately getting under the retina. The hemorrhage came from a small aneurism springing from the right internal carotid just at its termination The whole of the rest of the body was absolutely healthy.

Dr. J. E. Paul read the notes of a case of acute pancreatitis in a man of forty-three years of age, who died eight hours after admission. Temperature rose to 104° F. just before death. The peritoneum covering the pancreas was found to be glued with recent lymph to the posterior surfaces of the stomach. The pancreas itself was much swollen, and hemorrhages were to be seen, most numerous in the tail. Stomach and duodenum healthy. The rest of the organs healthy, except cloudy swelling of kidneys. No fat necrosis. Microscopic examination showed considerable disintegration, with total destruction in parts of the structure of the pancreas. Numerous hemorrhages were to be seen, and clumps of crystals of hæmatoidin.

Dr. Soltau Fenwick described two cases of fatal form of tetany associated with chronic dilatation of the stomach. One was that of a carpenter, aged thirty four, who stated that for six months he had suffered pain in the stomach after meals, and attacks of vomiting. The other had had symptoms of ulceration for four years, was suddenly seized with tonic spasms of the extremities after an unusually severe attack of vomiting. The condition closely resembled true tetany, and the seizures were repeated several times.

This complication of chronic dilatation of the stomach was first recorded by Kussmaul in 1869, and twenty-six cases have been published since. In the majority the gastric symptoms had been present for years, and in ninety-two per cent. of the cases which came to a necropsy a chronic ulcer in the vicinity of the pylorus was found to be the cause of dilatation of the stomach. In every case the tetany followed severe vomiting, the attacks lasting from one hour to several days. In seven cases the condition was further complicated by seizures of a tetanic nature, in which trismus and opisthotonos were usually marked symptoms, while in three others epileptic convulsions supervened. The disease is extremely fatal, out of the twenty-six instances eighteen terminated in death. The rational treatment which has met with some success is the regular employment of lavage, either warm water or a weak solution of resorcin being used.

Dr. Holman said that Dr. Ogle, of Reigate, had described to him a case of a patient who was admitted to the Cottage Hospital for severe vomiting. The stomach was found to be much dilated. The patient had two attacks of tetany and died in the second. At the autopsy no sign of ulceration was found, but the stomach reached far below the umbilicus.

Mr. Eve then read the notes of a case of tuberculosis-lymphangitis of the arm following a sore on the finger. The patient was in good health three years later but was afterward lost sight of. It appeared probable that an ordinary whitlow had been inoculated, perhaps in washing a handkerchief soiled with tuberculous sputum. For the purpose of establishing the diagnosis, guinea pigs were inoculated with pus from the abscesses, with positive results. The case was illustrated by colored drawings and photographs.

A similar case, described by Tuffier, was quoted, in which the patient succumbed to general tuberculosis; and this or phthisis is the usual termination of such cases. Tuberculosis lymphangitis almost invariably follows superficial lesions and usually the cutaneous inoculation of tubercle. In one case it was an anatomical tubercle, in another a warty tubercle on the back of the hand, and in three other cases the patients were women who developed nodules on the fingers while nursing their phthisical husbands. Stress was laid on the necessity of an early diagnosis so that the disease might be extirpated as soon as possible by erasion of the abscesses and removal of the nearest chain of lymphatic glands.

The President, Mr. Hulke, referred to the account of tuberculosis following inoculation in a surgeon, who accidentally inoculated his own hand, which ultimately ended unfortunately.

Small pox has declined in London. No deaths from it were registered last week and only nine fresh cases were notified. The cases remaining under treatment for the last four weeks have been respectively 100, 98, 84, and 63.

Diphtheria has also declined. The deaths for the last three weeks have been 67, 66, and 54. This number is 19 more than the corrected average for the week. The disease is widely distributed over the different districts.

CAR SANITATION.

To the Editor of the Medical Record.

Sir: The short reference to Dr. Cann's paper on "Car Sanitation," prompts me to write you of some of the observations made by myself recently regarding this matter.

What the Doctor says of the all prevailing amount of carbonic-acid gas in the cars is beyond question the rule in all cars save the drawing-room variety, especially in winter time.

Sufficiently noticeable, however, is this great amount of poisonous gas for those of us who took a train each day from early spring during all the summer months to note the fact, and seek an unoccupied car put on a station above where we boarded the train. Of course before our car had gone far it was as bad as the rest, but the system so quickly adapts itself to circumstances that we did not particularly notice the fact—but did, of course, have the headaches that go with the inhalation of this vitiated air.

Bad as all this is, it is by far the least objectionable of a lot of other unhealthful things to be noticed upon the trains. Not long since I noticed a filthy looking spot on the plush-covered back of a seat in front of me, and it took only a glance to see that some "filthy hog," as the lady with me observed, had been riding there before us, and had expectorated very disagreeable looking pus or muco-pus on this seat back.

If one's mind reverts to the fact that the germs of any one of several diseases may have been lurking in that dried sputum he feels uneasy and wants to change his seat, which, if the car is full he cannot do, and if he can accomplish it how shall he know that the next seat is better than the one vacated, since not all disease germs require a visible medium of transportation.

The unfortunate custom of covering that portion of the back of the seat which presents itself in front of each seat with plush or some other dirt-absorbing substance is a thing easily remedied, for there is no reason why thin hard wood should not be used instead.

As to the disposal of germs in the cars there is a very simple and not very expensive way of doing this. If a compartment into which each car could be run and remain for two hours after each trip should be so constructed that a temperature of, say 240°, could be maintained, all animal life would thus be destroyed.

There are many other things tending to convey disease and death. Take the matter of the handling of the ice for the ice-water tanks. You shall see men with dirty, ill-kept hands, handling the ice in those filthy hands and putting it at once into the tank, wiping their hands on already very-much soiled trousers, and then repeat the operation with the tank in another car.

Then too there is the question of where the water itself is obtained. On one of our leading railroad through trains for the West, the water is supplied from the Jersey City water, which is taken from the lower Passaic River, a notably unhealthy stream because of sewage from further up, as note the cases of typhoid fever in Jersey City and Newark until recently.

All this is easily avoided, and the State should see to it that the water be taken from pure sources and the ice also, besides seeing to it that the companies provide suitable means of carrying ice without the men handling it.

Minor matters, like the ridiculous custom of the one sitting next a window being the sole arbiter of whether the window shall or shall not be open; if open it may chance to let in very objectionable draughts on every one, as very many suffer bronchitis, etc , from it, or possibly smoke, cinders, and dust may cloud the car, and all suffer because of the carelessness or stupidity of the one passenger who claims the right to control this particular window.

It is quite true that all these matters would entail some care, possibly some expense on the companies if they are to be corrected, but certain it is that these matters all require attention and none of them are at all trifling, but of grave moment to the lives and health of the travelling public. W. Washburn, M.D.

THE DANGERS OF NIGHT CALLS.

To the Editor of the Medical Record.

Sir: In the daily papers of Thursday and Friday of last week appeared sensational reports of my appearance in the Jefferson Market Police Court as complainant against a man whom I believed had robbed me. The injustice which this publication has done me is of so grave a nature that I beg you to print the actual facts of the case, which are as follows:

At about 3 A.M. Thursday morning I left my house to visit a patient, in answer to a messenger call to West Forty-second Street. I went directly there, arriving about 3.30. I left there at about 5 A.M. Arriving in Seventh Avenue on my way home I stopped at a public house and ordered a sandwich. While paying my check at the cashier's desk I was jostled by three men, and a roll of bills which I had returned to my pocket was taken by one of them. The man ran out upon the street and I quickly followed. I called a policeman, and, together we started in pursuit of the fugitive, who sought refuge in a public place one or two blocks above. I identified the man, and caused his arrest. I went to the station house with the policeman and his prisoner, and made my charges against him. A little after eight o'clock I appeared against the prisoner in Jefferson Market Court, before Justice Hogan. I was asked by the Justice if I was drunk at the time of the robbery. I indignantly and truthfully answered "No." The policeman was then ordered to make the charge against the prisoner. In his written statement, I found the following: "Defendant was arrested on the complaint of Dr. Phelps, who had the appearance of being drunk, and was under the influence of liquor." I quietly asked the policeman to charge me with being drunk, and to sign his name to it. When he declined to do so, I tore up the statement, not knowing that it had been signed by the Justice—if it had been. The Justice then held me in $200 bail for contempt of court. By permission I went for bail to the house of Dr. George Evans, 49 West Thirty-ninth Street, and soon returned. The Justice imposed a fine of $5 and discharged me.

In support of the above I can furnish statements—1. From my patient, showing that I had not been drinking and was not intoxicated when I left the house soon after 5 A.M. 2. From Dr. W. O. Plimton, 19 West Eighty-fourth Street, my medical associate, showing that I was not intoxicated immediately before I went to the police court; and 3. From Dr. Evans, showing that I was not intoxicated thirty minutes after the trouble in court—however excited I may naturally have been at that time.

I would deem such explanations entirely unnecessary for those who know me, but in view of the widely published statements in the public press I deem it incumbent upon me to put in a general denial.

With this brief presentation of the case, showing that I was assaulted and robbed while in the performance of professional work, such as calls a physician to any part of the city, I will say nothing more, but will leave the whole matter to the judgment of the reader.

A. M. Phelps, M.D.

[It is obviously unnecessary to dilate on the facts of the case. To anyone who knows Dr. Phelps the charge of drunkenness is ridiculously absurd. Indeed it would scarcely be worthy of notice save to offset a widely published scandal, in which insult was added to injury, and proper redress was apparently out of the question.—Ed.]

New Instruments.

A NEW NASAL FORCEPS.

By SAMUEL GOLDSTEIN, M.D.,

NEW YORK.

SENIOR ASSISTANT SURGEON, NEW YORK THROAT AND NOSE HOSPITAL; ASSISTANT SURGEON, OUTDOOR DEPARTMENT, MOUNT SINAI HOSPITAL.

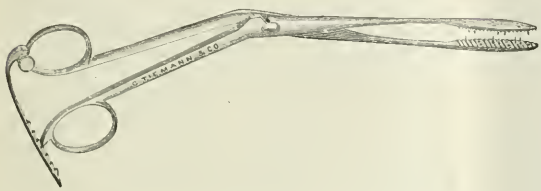
How frequently, in the examination of the nose, the surgeon finds hypertrophy or exostosis of the inferior turbinated bone, of such a nature that only removal of this obstruction will afford the radical relief the anxious patient seeks.

The patient comes to you and enumerates his symptoms: of having cold upon cold in the nose; the nostrils being alternately obstructed; obstructed very often to such an extent that he does not breathe through one nostril, and barely with the other. He seeks radical relief.

In a large majority of cases we are told that all forms of treatment have been tried, including cauterization with chemical caustics, and the actual cautery. These methods of treatment have given him temporary relief, as the mucous membrane, which was only part of the trouble, was reduced in size; the main cause of the trouble being still *in situ*. He further tells us that he does not wish to be continually under treatment, but wants such operative measures enacted as will rid him of his nasal obstruction.

The question naturally arises, can we place such a patient in a condition that when we discharge him we can truly say that his nasal obstruction has been removed; that he may still contract a slight nasal inflammation, not as readily as before, and of such a nature that very simple treatment will be effectual? How are we to accomplish this end, should the cause of the trouble be due to hypertrophied inferior turbinated bone?

The answer to this query, from the results experienced at the New York Throat and Nose Hospital, and my own, is in the removal by saw and forceps of a sufficient amount of the hypertrophied inferior turbinated bone. The objections that are usually made to the operation are, I fully believe, of little weight. I will enumerate such as I usually hear, and endeavor to meet them in detail.



We are told that this bone has a function, and should not be removed, even in part; that the operation is attended with too much shock; that the hemorrhage is excessive, often uncontrollable, and is so great that the patient becomes exsanguinated; that the operation, as done under cocaine anæsthesia, is too painful for the ordinary patient; finally, that the results do not justify the means.

I fully concur with the statement that the inferior turbinated bone, in its normal state, has a function, and appreciate that thoroughly. May I, however, ask, what surgeon would hesitate to remove an extensive exostosis in any other region of the body? It is only when the inferior turbinated bone is so hypertrophied as to cause obstruction, that this part is to be removed.

In all of the operations that I have witnessed, and in those that I have performed, there has been so little shock, that the patient, in a comparatively short space of time, was able to retire, and in some cases, resume his usual vocation. Hemorrhage, there necessarily is, greater or less, depending upon the condition of the nose; but never so great as not to be within the control of the operator; in the main so slight as only to ooze for a short time after the operation, and perhaps for twenty-four hours later. That there is some pain attending the operation is most true; but it can be minimized by the skilful surgeon, who performs the operation in a comparatively short space of time; and furthermore, much more quickly by the aid of a forceps that will grasp the detached segment of bone firmly, and permit immediate withdrawal of the same.

I hardly believe that it is necessary for me to state that the operation is done in a worthy cause, that the end amply justifies the means. Anyone who has seen the mouth breather, whose nostrils were obstructed with hypertrophied inferior turbinated bone, and who has removed such obstruction, knows the gratitude felt by his patient for the immediate relief afforded.

For the purpose of making the time consumed in operating as short as possible, to minimize the pain, possible shock, and hemorrhage, I have planned and had this forceps made. The nasal forceps now in use have their inner flanges serrated, or partly serrated and tunnelled.

There is always a flow of blood resulting from sawing through the bone; after the bone has been sawn, and the segment hangs pendent, attached only to mucous membrane and perhaps some cartilage, the forceps is applied to grasp the segment for removal. Here considerable difficulty is met. The blood fills in the serrations, making the surfaces of the flanges of the forceps slippery; upon their withdrawal we are surprised not to find the segment in its grasp. We tell the patient to blow his nose to clear the field, and readjust the forceps, and repeatedly meet with similar disappointment upon their withdrawal. This is disappointing and discouraging to the average operator. By this time the segment may be entirely detached, and slipped to the floor of the nasal fossa toward the posterior nares. The forceps is applied and re applied often fruitlessly. This having consumed much time, much, if not all, of the cocaine anæsthesia has worn off, and further manipulation of the parts becomes painful to the patient, who has also been made nervous through delay.

To prevent this delay, unnecessary manipulation, and contusion of the parts and subsequent pain, I place this forceps before you, hoping that it will prove as satisfactory and efficient with you as it has been to me in my work. The forceps consists of two blades with scissors handles. The flanges at the end of the blades are about the size of the hypertrophied portion of bone usually removed. The inner surfaces of the flanges have five pointed uprights, and between the uprights are perforations through which the uprights pass when the forceps is clamped. The inner surfaces of the flanges are also serrated to make the clamping more secure The blades are bent and strong, the joint connecting them especially so. At the handle is a spring catch that can be used at will, to insure a more thorough grip after the forceps has been clamped.

The working mechanism is simple: After the hypertrophied segment of bone has been sawn through and hangs pendent, the forceps is clamped over it, and when once placed properly, the pointed uprights piercing the bone, the forceps is closed, the catch sprung tightly, and then there is no possible chance for slipping to take place. Then the segment can be twisted off and removed from the nostril; or if not sufficiently sawn, the forceps is twisted toward the septum, the saw re-introduced at the side of the forceps, the remnant detached, and the segment removed. This, when properly done, renders the operation expeditious and successful. This part of the operation, usually occasioning so much delay, with the aid of this forceps consumes the least amount of time. All parts of the forceps can be detached for cleaning.

I am indebted to Messrs. George Tiemann & Co. for the skilful execution of the plans.

166 East Ninety-third Street.

Medical Items.

Placarding Contagious Diseases in Tenements.—The following official document has just been issued by the Health Department of New York:

"CHARLES F. ROBERTS, M.D., *Sanitary Superintendent.*

"SIR: We desire to direct the attention of the Board of Health to the necessity for the adoption of some more adequate means to prevent the extension of contagious disease in tenement houses and apartment-houses, and particularly for the enforcement of isolation of persons sick with these diseases. The methods which have been long employed in the Health Department, *i.e.*, frequent visitation and instruction by Department inspectors, have been found to be only partially effective. It has been the custom for years in cases of contagious disease for the inspectors of the Department to visit the families of the sick persons, inform them as to measures of disinfection and methods of isolation, and at the same time to notify other families in the house of the existence of a case of contagious disease in a given apartment. This method of giving publicity to the case and of warning other occupants of the house is ineffective in the accomplishment of the desired end; *i.e.*, the complete isolation of the patient and the prevention of further infection. Notifying all the inmates of a large tenement is a very difficult matter, and, if notified, experience has shown that they soon forget the existence of illness in the house. Repeated inquiries have demonstrated the fact that frequently many of the inmates of a house where there is a case of contagious disease do not know of the existence of any sickness. Further than this, this method fails entirely to protect strangers or visitors who may go to the house or apartment. Ladies in search of servants have been repeatedly found in houses or in apartments where cases of contagious disease were present, and servants who have been living with families where there are cases of contagious disease, on obtaining situations frequently go to their employer's house carrying infection with them; or, when relieved from duty for an afternoon or evening, visit families where there are cases of contagious disease, and not infrequently carry infection back to the houses in which they are employed. Very commonly washing or various kinds of sewing is secretly done by other members of the family in apartments where such cases are ill, and the garments thus infected on the premises are later returned to the owners. In small shops business is sometimes carried on, and in one of several instances recently a number of cases of diphtheria were directly traced to an infected candy store.

"Notifying inmates of the house is ineffectual, further, because it has been found that, as a rule, intercourse of families in tenement houses is not with others in the same house, but with families which live in other houses, and the latter are entirely unprotected by the methods at present followed. It has seemed to us, after careful consideration of this subject, that the desired object would be best obtained by the placarding of apartments in tenement-houses where cases of contagious disease exist, and we therefore have the honor to recommend that hereafter the Chief Inspector of Contagious Diseases be authorized, in his discretion, to placard apartments in tenement houses where there are cases of contagious disease. The following considerations may render still more apparent the necessity for this action: 1. Under the present conditions it is impossible to prevent strangers and visitors from entering apartments where there are cases of contagious disease, and they or their clothing thus frequently become infected and either they contract the disease themselves or they transmit it to others. These strangers or visitors are usually not aware of the existence of disease in the house or apartment, and unwittingly expose themselves and act as media for the dissemination of the disease. If the apartments were placarded, this means of dissemination would be prevented. 2. In diphtheria, as has been repeatedly and abundantly shown by the investigations of this Department, patients are often apparently well long before they are free from the infectious agents, and in spite of repeated warning from Department inspectors these patients, especially when children, mingle with other children and thus transmit the disease to them. This is one of the most common and important means for the dissemination of diphtheria, and it is of no less importance in scarlet fever and measles, as in the latter diseases desquamation frequently continues many days after the patient has apparently quite recovered. 3. There are at present no means by which other inmates in tenement-houses can know when convalescent cases of contagious disease have ceased to be dangerous. They can only be governed by appearances, which, as we have seen, are deceptive. If apartments where cases of contagious disease existed were placarded, isolation would be enforced by the other occupants of the house until the department inspectors allowed the placard to be removed. 4. The moral influence of such placards, both upon the inmates of the apartments, the inmates of the house, and strangers or visitors to the house, would be of as great service in enforcing isolation and preventing extension of disease as the visits and instruction of our inspectors. It has been found impossible, even where daily visits were made by medical inspectors, assisted by the sanitary police, to enforce the isolation of children convalescing from diphtheria and scarlet fever after the serious symptoms have disappeared. It is undesirable at such times, unless absolutely required, to remove such patients to the hospital, and yet in the eruptive fevers this is the period of the disease when there is greatest danger of transmission to others.

"During the last year we have had a serious epidemic of diphtheria to deal with. The number of cases reported weekly during the last months, however, has steadily decreased. The schools have just now opened, and it seems to us that the most strenuous efforts should be made to prevent a new outbreak of the disease or its reintroduction to the schools. This measure would be of undoubted service in accomplishing the desired object. We would recommend, therefore, that placards should be nailed to the outside doors of the apartments in which cases of contagious disease are present, when in the judgment of the Chief Inspector of Contagious Diseases this course seems to be desirable, and that the placards should bear the following inscription, differing as to the name of the disease in question and as to color. The color for diphtheria should be white; for scarlet fever, red; for measles, blue.

DIPHTHERIA.

All persons not occupants of this apartment are notified of the presence of diphtheria in it, and are warned to avoid entering it until this notice is removed. The persons sick with diphtheria must not leave the apartment as long as this notice remains here.

The removal or defacement of this notice is forbidden.

By order of the Board of Health,

..... *President.*

..... *Secretary.*

"For some months in certain classes of tuberculosis the system of placarding apartments has been authorized and employed by the Health Department, and has proven very satisfactory in the attainment of the object desired. The only objection apparently to be urged against this measure is that the inmates of the apartment may object to the publicity thus entailed. This, however, is exactly the object which the measure is justly and properly designed to subserve, and is, in our opinion, the strongest argument in favor of its adoption.

"(Signed) Respectfully submitted,

"HERMANN M. BIGGS,

"*Pathologist and Director of the Bacteriological Laboratory.*

"A. H. DOTY,

"*Chief Inspector of Contagious Diseases.*"

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Original Articles.

ON SYMPHYSEOTOMY, WITH THE REPORT OF A NEW CASE.[1]

BY HENRY J. GARRIGUES, A.M., M.D.,

CONSULTING OBSTETRIC SURGEON TO THE NEW YORK MATERNITY HOSPITAL; GYNECOLOGIST TO ST. MARK'S HOSPITAL OF NEW YORK CITY, ETC.

WHEN I had the honor of reading my last paper on symphyseotomy before the Obstetric Section of the Pan American Medical Congress, in the month of September, 1893, I said that taking the *pros* and the *cons* into due consideration, I thought that the next time I had the opportunity of performing the operation I should try the Italian method first, and so I did in the following case, that presents several points of interest in regard to the indication, the operation, the course, and the result.

Pelvic Tumor; Large Child; Italian Method; Waddling Gait.—Mrs. G. V. D——, aged twenty-nine, German, married, was admitted to St. Mark's Hospital on June 27, 1894. She had had one child, eight years ago, which died at the age of eleven weeks. She had been suffering from dysmenorrhœa for years, and menstruation had been very irregular of late. She last menstruated in August or September. For three months she had been suffering from lumbar pain, and for two from anasarca. Labor pains began at four o'clock in the morning. She had been examined by a midwife, who said she was pregnant, and by a doctor, who said she had an ovarian cyst, and abstracted some fluid with a hypodermic syringe through the abdominal wall. She had considerable anasarca all over, especially the face, hands, abdomen, and legs, and on boiling about one-sixth of the urine coagulated. She was in labor. The os was situated far forward over the symphysis and measured two inches in diameter. Bag unbroken. Vertex presentation. Fœtal heart very distinct, one inch to the left of and above the umbilicus.

At 4.30 P.M. the os was fully dilated, but the head made no progress, being pressed forward over the symphysis pubis by a soft, non-fluctuating mass in the rectovaginal septum, extending nearly up to the cervix. The heart-sounds had become so weak that they were heard with difficulty. I proposed to perform symphyseotomy, in which my colleague, Dr. Boldt, who happened to come to the hospital, and whom I requested to examine the patient, concurred. After thorough disinfection and the patient being in the dorsal decubitus with bent knees and raised feet, I made an incision in the median line two inches long and ending one-half inch above the symphysis. Small transverse incisions were made right and left, just above the pubic bones, and just long enough to admit the left index finger, which was easily inserted down to the lower end of the symphysis. A few small blood-vessels were clamped. Next, Galbiati's falcetta was introduced along the finger. The bones were in close contact and the notch at the lower end of the symphysis could not be felt. There was slight difficulty in finding the symphysis, but once found it was easily cut from below upward, and from behind forward, using the left index finger as a guide in the vagina, and having the urethra held by an assistant over to the right side with a metal catheter. By reintroducing the finger into the wound I felt that the ends of the bones were only separated one inch, especially at the upper end of the symphysis, and less at the lower, where they were bound together with a sinewy tissue (part of the subpubic ligament) which was easily ruptured. The head descended immediately and was easily extracted with forceps without any tear of the vagina or the perineum. The child, a female, weighing ten and three-quarter pounds, was dark blue, the heart-beat very slow, no respiration, and the meconium pouring out from the anus. Seeing the great danger of the child, I removed it to another room and concentrated my whole attention on its revival, leaving the care of the mother to Dr. Boldt, who saw a large artery spurting in the cervix, which he tied with catgut carried round it with a curved needle. The placenta was expressed by Credé's method, and two hypodermic injections of twenty-five minims of fluid extract of ergot given.

The child having been revived I returned to the mother and found by actual measurement a distance of five inches (12.5 ctm.) between the pubic bones, merely due to the weight of the thighs, which were being kept bent, but without pressure on the trochanters. Then two assistants were directed to bring the ends of the bones together by pressing on the trochanters, while I held back the bladder and vagina. There was slight venous bleeding from the bottom of the wound. Four silk sutures were inserted through the edges of the wound in the soft parts; nothing was done to the ends of the bones; the wound was packed with iodoform gauze, the end of which was led out at the lower end of the wound while the three upper sutures were tied. The vagina was likewise tamponed with iodoform gauze. While the pelvic bones were kept together, and the legs were kept extended, three straps of rubber adhesive plaster, two inches wide, were drawn round the pelvis and the trochanters, and crossed in front above the wound. The vulva was covered with my pad.

The next morning the gauze was removed and the last suture tied. The child was large and in excellent condition.

	Centimetres.	Inches.
Occipitomental diameter	14	5½
Occipitofrontal diameter	12.5	5
Biparietal diameter	10	4
Bitemporal diameter	8	3¼
Circumference of head	38	15
Length of body	56	22
Circumference of chest at arm-pit	38	15
Bisacromial diameter	13.5	5½

On the third day after the operation the mother developed incontinence of urine, which lasted a few days. The urine contained many cells from the kidney epithelium and numerous casts from the circumvoluted, straight, and narrow tubules; but these, as well as the anasarca and albuminuria, disappeared soon.

July 3d (Sixth day).—She had a rise in temperature reaching 103° F., probably due to mastitis, hard, tender nodules forming in both breasts, but disappearing in four days under the use of ice-bags. But the fever may also have been partly due to suppuration at the wound.

July 4th.—There appeared slight suppuration round the stitches, which were removed. The edges were united by first intention, but the following day half an ounce of pus was pressed out from an opening at the upper end of the wound, and a thin drainage tube, three inches long, was inserted.

July 7th.—The patient, who was rather self willed,

[1] Read before the New York County Medical Society, October 22, 1894.

lifted herself on the bed-pan by arching herself on her shoulders and heels, without any pain.

July 10th (Thirteenth day).—She took a few steps, supported under her shoulders, and felt solid. On the 12th the upper two thirds of the symphysis were felt in perfect apposition, while at the lower end there was just room for the tip of the finger. The plaster straps being loose were renewed.

July 18th.—The distance between the bones was only one-eighth to one-sixth inch. The tumor in the pelvis had entirely disappeared, and must, therefore, probably have been due to serous infiltration, like that forming the anasarca. Only the left ovary was felt swollen way up in front of the left iliac synchondrosis.

July 20th.—She walked alone by holding on to the furniture; on the 26th she walked without support and amused herself by carrying food to other patients.

July 31st (Thirty-fourth day after the operation).—She left the hospital by her own request.

On October 9th I saw her and her child. The latter was in excellent condition, and the mother could lift it, but she had a waddling gait, some cystocele, and off and on pain in all the three joints of the pelvis; but she said she was improving. By vaginal examination I found the greater part of the ends of the pubic bones in apposition, but at the lower end the diastasis had increased to half an inch.

The subject of symphyseotomy has attracted so much attention during the last two years that I may suppose every member of this Society is familiar with the chief features of it, and I have twice treated it at some length.[1] I shall, therefore, to night, limit myself to the discussion of some particular points upon which opinions differ much among the different authors engaged in the discussion of this operation, basing my opinions not only on the limited experience I have had with it myself, but on a somewhat extended study of the cases reported by others.

First, however, I shall briefly call attention to some features of the case I have just reported. The distance of five inches between the ends of the pubic bones is quite unusual. As a rule it is only one and one-quarter to one and one-half inches when you hold the legs flexed without pulling. How much it was before and during extraction of the large child I could not tell. The child being in the greatest danger of dying, there was no time for such investigations. What I can state for sure is that I did not meet with any resistance in extracting, and that no cracking sound was heard, such as is reported invariably to be distinctly audible when the sacro-iliac joints are overstretched and ruptured. Perhaps the great serous infiltration which produced the anasarca of the whole body and the swelling in the pelvis for which the operation was performed may have caused an unusual laxity of the sacro iliac joints.

Secondly, I would notice the miserable condition of the patient's kidneys, the microscopical examination showing that all parts of the same were affected, and the circumstance that the patient had been examined by one midwife and three doctors without antiseptic precautions.

Either of these circumstances would have excluded recourse to the Cæsarean section, and if Porro's operation had been performed, she would undoubtedly have died. Forceps and version being out of the question, on account of the disproportion between the size of the child and the space left in the pelvis by the tumor, the only alternative would have been to kill this splendid child, weighing nearly eleven pounds, while symphyseotomy allowed us to save both mother and child.

It is true the mother has a somewhat unsatisfactory gait, but it is better to waddle through life than to be put at rest under ground.

Passing to the consideration of the operation in general, I shall limit myself to remarks on its prognosis, its indications, its methods, and the question by whom and where it ought to be performed?

[1] American Journal of the Medical Sciences, March and April, 1893, and American Journal of Obstetrics, November, 1893.

Mortality.—A chief point to be taken into consideration in ventilating the advisability of performing a certain operation is, of course, the prospects it offers as to life and health. In his large work on symphyseotomy Neugebauer[1] has collected 213 cases of modern operations performed between the beginning of 1887 and the middle of 1893. Of the mothers 183 recovered, 27 died, and in 3 cases the result was unknown; that is, a maternal mortality of 12.85 per cent. As to the children the results were unknown in 8 cases. Of the remaining 205 children, 7 were dead before the operation; 9 died during parturition; 189 were born alive; but of these 31 died soon, leaving 158 as permanently saved. The direct infantile mortality was, therefore, only 4 54 per cent., but counting those who died within a few days as lost the mortality among the children was 20.2 per cent.

In connection with these general statistics it must however, not be overlooked that the operations were performed by a very large number of operators, *e.g.*, the first twenty-eight American operations by twenty-three different operators, and often in private houses, so that very few men have acquired a large personal familiarity with the operation, and that it often has been performed with deficient antiseptic precautions. At the hands of men accustomed to obstetrical and gynecological operations there has hardly been any maternal mortality. Thus we find Pinard operating 18 times and Zweifel 23 times without losing a single mother, and the Italians have, since January 1, 1886, had 55 operations with a loss of only two women.[2] We are therefore warranted in saying that performed under the most favorable conditions there is practically no maternal mortality inherent in the operation.

For the child the outlook is not so good, but still better than in most other methods of delivery, not to speak of craniotomy, with which symphyseotomy especially competes, and by which the child is deliberately killed, and here again the skill of the operator has diminished the mortality considerably. Thus in the above-mentioned 55 Italian operations only 8 children were lost, *i.e.*, 14 55 per cent.

Injuries.—Several operators, especially German, have reported cases in which the soft parts of the mother sustained considerable injuries—the urethra, the bladder, and the vagina being torn during extraction. On account of the greater firmness of the tissues this is more likely to happen in primiparæ. The bladder and the vagina may also be caught in bringing the pubic bones together. The sacro-iliac joints have been ruptured and separated. Such accidents may, however, to a great extent, be avoided by extracting the child slowly and in the proper direction; by avoiding pressure in front; if necessary, by performing episiotomy; by keeping the protruding vagina and bladder back during approximation of the bones; and by not passing the proper limits of the indications. Most of these injuries were successfully repaired either by immediate suture or by a consecutive fistula operation.

On the other hand, it cannot be denied that a certain number of women develop a waddling gait. That this is not so very rare will appear from the fact that I have had one such case in two operations, Grandin one in four operations, Zweifel three in twenty-three operations, and Fritsch even four in four operations.[3] But if this waddling gait does not look well, it need not interfere with perfect health and strength, even allowing the woman to do the hardest field-work and carry her eleven months' old baby many miles, as in a case reported by Fritsch.

Indications and Comparison with Other Methods.—Since only a few years have elapsed from the time of the new impetus given to this old operation in 1892, it is quite natural that opinions in regard to its proper field should vary much among leading obstetricians, and one

[1] Neugebauer: Ueber die Rehabilitation der Schamfugentrennung oder Symphyseotomie, Leipzig, 1893, pp. 272 and 276.

[2] Harris: Gynecological Transactions, 1894, vol. xix., p. 254.

[3] Centralblatt fur Gynäkologie, 1893, p. 1097; ibidem, 1894, pp. 347, 460

has even the impression that national tendencies to prejudice in favor of or against it have not been without influence on the bias of the different authors. Thus, while Leopold rejects the operation altogether in primiparæ, and wants it limited in regard to the flat pelvis to cases of 6 to 7½ ctm. (= 2½ to 3 inches) true conjugate, with both mother and child perfectly healthy;[1] Pinard thinks it must replace introduction of premature labor and every operation which exposes the head of the child to a pelvic resistance that cannot be overcome by uterine contractions.[2]

Personally I think symphyseotomy ought to have a rather wide range in lying-in hospitals and under circumstances that favor a good result, especially sufficient assistance and the possibility of having a reasonable degree of asepsis. In the flat pelvis I think we may expect an easy delivery when the conjugate measures at least three inches, and that it may yet be performed when the conjugate measures only two and three fourths inches. To go below this is hazardous, unless the child is abnormally small.

The great gain obtained in the lateral directions make symphyseotomy particularly valuable for us on account of the preponderance of generally contracted pelves in New York and Boston, and perhaps other parts of the United States. As to the upper limit for symphyseotomy, it ought, in my opinion, to be placed in a flat pelvis at a true conjugate of three and one-half inches, and in a generally contracted even at four inches.

Symphyseotomy may render good service under other circumstances than a narrow pelvis, such as pelvic tumor, occipitoposterior position, impacted mentoposterior face presentations, ear presentations, in eclampsia, etc.

In studying foreign authors on the indications for symphyseotomy in narrow pelves, it should be borne in mind that the average weight of new-born children is considerably greater in America than in Europe. Lusk found the average of two hundred cases in Bellevue Hospital to be 7⅔ pounds, while Tarnier gives it as 3,174 grammes = 7 pounds, Spiegelberg as 3,174 grammes = $6\frac{9}{10}$ pounds, and Playfair at only 6½ pounds. We can, therefore, not descend so low as European accoucheurs do, and must place the upper limit for symphyseotomy higher.

Craniotomy on the living child is a repulsive operation that has met with just condemnation from many sides. As long as the alternative was only Cæsarean section, I did not hesitate to sacrifice the child in order to save the mother, but since in symphyseotomy we have got an operation almost without danger to the mother and with moderate danger to the child, I do not think any man should feel compelled to, or justified in, deliberately murdering the child, provided the necessary conditions for a successful symphyseotomy can be brought about.

Induction of premature labor entails only a maternal mortality of five per cent. against nearly thirteen in symphyseotomy. In skilful hands there is hardly any mortality for the mother in either of these operations, but then the infantile mortality is very high,[3] and many premature children die.[4] In cases in which the mother's life is to be preferred, which is the rule, and we see the patient in time, recourse may, therefore, be had to induction of premature labor; but in cases in which the mother is particularly anxious to have a child, symphyseotomy at term should be preferred.

In Cæsarean section the infantile mortality is only six, against twenty in symphyseotomy, but then the maternal mortality is twice as large in Cæsarean section, twenty-five against twelve and one-half per cent., and if we only take the most skilful operators, the mortality of symphyseotomy is practically none, against eight per cent. in Cæsarean section. One must, therefore, be a fanatic worshipper of the latter operation in order to think of performing it when the former is practicable. Besides, Cæsarean section is only indicated in aseptic cases.

Symphyseotomy competes even with Porro's operation, since it has been successfully performed after the patient had been in labor for days, and had been examined without antiseptic precautions. But Porro's operation has a maternal mortality of 37.78 per cent., and an infantile mortality of 22.40 per cent.[1] If the condition of the patient is not too bad, and there is no absolute indication for Cæsarean section, symphyseotomy should, therefore, be preferred.

Even difficult forceps and version operations ought to be replaced by symphyseotomy. If the true conjugate is three inches or more it may be well to try the forceps before performing symphyseotomy as recommended by Morisani,[2] but below that we only jeopardize the child's life, and perhaps the mother's too, by using the forceps.

I have a painful recollection of cases in Maternity Hospital of generally contracted pelves with the male type, in which with all my strength I extracted a dead child, its mother dying within a few days, so that I even resolved in similar ones to perform Cæsarean section, but now would substitute symphyseotomy. Furthermore, all those cases we read about of three strong men pulling at once or in succession on a pair of forceps ought to be relegated to the history of barbarian times.

As to version, we well know how difficult it is to get a living child through the pelvis, if there is any appreciable narrowness. If the conjugate is less than three and a quarter inches, both version and the high forceps operation entail much greater danger for the life of both mother and child, to which must yet he added the danger of the child becoming idiotic or epileptic. If the child is unusually large, symphyseotomy comes in as a life saving operation for both mother and child, even when the pelvis is normal.

This paper has already become so long that there is no time left for me to enter at length into the question of the *modus operandi*. I shall only recommend the Italian method as much the simpler one, which also has given better results than the French.

Instead of the chain-saw needed in rare cases, which is expensive and difficult to render aseptic, Gigli recommends rough steel wire.[3] It is not necessary to unite the ends of the pubic bones with silver wire (Schauta), or, to hammer steel pegs into them and draw them together with silver wire (Regnier),[4] or to have special apparatus to press on the trochanters, as proposed by Pinard, Kofer, Bidder, and Krassowski.[5] Rubber adhesive plaster carried round the pelvis, while the legs are kept straight, is sufficient for a good union. I think it is better to leave a rubber drainage-tube behind the symphysis for a few days. The extraction ought to be made while the knees are kept bent, and not, as advised by Leopold,[6] in the suspension position (Hängelage), which brings the ends of the pubic bones together. Four assistants are needed, and at least one of them ought to be an expert, as the child often is asphyctic, and there may be maternal hemorrhage demanding immediate attention.

Who shall Perform Symphyseotomy?—In laying down rules for the indications of symphyseotomy I have only treated the question from a purely scientific standpoint, as it ought to be, without taking into consideration what every practitioner may be capable of doing. When a man has a cataract, it ought to be taken out: whether a particular physician is competent to do so or not, that is a question between him and his patient. But just as everybody is not a fit person for extracting a cataract, thus a man may be an excellent physician and still not be the right man to have a symphyseotomy performed

[1] Centralblatt für Gynäkologie, 1894, p. 448.
[2] Ibid., p. 348.
[3] Forty-three per cent. according to Wyder, Arch. f. Gynäk., 1888, vol. xxxii., p. 60.
[4] According to Winckel two-thirds, Gynecological Transactions, 1894, vol. xix., p. 255.

[1] Playfair: Sixth American edition, 1893, by Robert P. Harris.
[2] Morisani: Centralbl. f. Gynäk., 1894, vol. xviii., p. 546.
[3] Gigli: Centralbl. f. Gynäk., 1894, p. 120.
[4] Centralbl. f. Gynäk., 1893, vol. xvii., p. 752.
[5] Ibid., 1893, pp. 752 and 937
[6] Leopold: Centralbl. f. Gynäk., 1894, vol. xviii., p. 450.

by. Nobody should undertake this operation who is not an operative gynecologist or a general surgeon with obstetrical experience. In some cases very serious hemorrhage has to be dealt with, in others severe injuries of delicate and important organs demand immediate repair, and in most the child has to be artificially revived. This is, therefore, an operation which most general practitioners had better place in the hands of a fellow-practitioner with experience in that kind of work, just as he would send a patient afflicted with a cataract to an oculist.

Where should Symphyseotomy be Performed?—As it is next to impossible to perform an aseptic operation in most private dwellings, especially of the poor, who are much more likely to require symphyseotomy than the rich; as many and skilled assistants are needed; and as the after-treatment often is quite complicated; the chances for a good result with this, as with all major operations, are much better in a hospital than in private houses. Wherever it is possible, patients requiring symphyseotomy should be removed to a hospital, be it a lying-in hospital or another institution where abdominal operations are usually performed. Such a place in this city is St. Mark's Hospital, and I shall be happy to treat any case there you will place under my care. It is, in my opinion, no excuse for killing a child that the accoucheur is not prepared to perform symphyseotomy, as long as there is somebody else within reach whose services can be obtained, and who is able to substitute a life-saving for a destructive operation.

SURGERY OF THE STOMACH.

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MR. PRESIDENT AND MEMBERS OF THE SOUTHERN MINNESOTA MEDICAL SOCIETY: The stomach is now amenable to surgical relief from a large number of conditions, which until recently have been supposed to be purely medical in character, and in many respects it offers unexpected opportunity for operative interference. In the first place, it is an organ more or less fixed within a certain definite part of the upper abdomen. In the second place, in a large majority of instances it can be irrigated and rendered fairly clean before operation. In the third place, by rectal alimentation it can be given rest afterward; and lastly, its thick muscular walls afford a good hold for suture, while its blood supply is of such nature as to give union after extensive resections, herein differing materially from the thin-walled, mesentery-nourished intestine with more or less constant vermicular action. I will not take up your time with the anatomy of the stomach, more than to mention that its cardiac extremity is the only fixed point, and that it is suspended, so to speak, in such a way as to vary its position whether contracted or dilated. In the former case, lying deep under the liver against the crura of the diaphragm, and in the latter occupying a prominent position in the hypogastrium. The lesser omentum, as containing the main blood-vessels, is of much surgical importance, as are also the relations of the mesocolon and other delicate structures in the neighborhood of the pylorus. As pointed out by Tillaux, the cartilage of the ninth rib forms an important guide to the lower border of the stomach. The diagnosis of gastric disease, as a rule, is not difficult. The stomach can be distended by ether, as recommended by Felitzet, or by the use of bicarbonate of soda and an acid, as practised by Jacobi. Usually, the introduction of a definite quantity of water will sufficiently mark its outline, and by forcing air into the colon per rectum, as practised by Senn, the relation of the stomach to the transverse colon can be mapped out. By such means, I was able to diagnose a pancreatic cyst definitely, the tumor being shown to be retroperitoneal and lying behind the gastrocolic omentum, the operation proving the diagnosis. (Case 1349, St. Mary's Hospital Records.)

The value of the examination of test meals and the amount of acid as affecting the diagnosis of cancer, is thoroughly laid down by Von Jaksch in his "Clinical Diagnosis," the presence of free hydrochloric acid being a factor in the diagnosis as against cancer and in favor of ulcer. The effect of the weight of tumors in displacing the stomach is ably shown by Osler in a series of papers, beginning in the *New York Medical Journal* of February 3, 1894. As preliminary to operation upon the stomach, irrigation is of great value where it can be practised, and, as pointed out by Kussmaul, much benefit may be derived from lavage where obstruction exists below, thus relieving the stomach of irritating material, removing the distention and interference with breathing, and putting the patient into better condition for operation. Shall the stomach be distended previous to operation, to facilitate finding it? I have personal reason to know, in at least two operations, that where the stomach is contracted from stricture of the œsophagus and the colon greatly dilated through rectal alimentation, the difficulty of finding the stomach may be great. In these cases the stomach was found by the sense of touch, for after a little experience the feel of its thick walls will not be forgotten. Previous distention may assist in finding the stomach, but it complicates the further manipulation and introduces an element of danger of wound contamination from escape of its dilating contents. I believe it had best be empty. The after-treatment of gastric operations is changing toward the earlier administration of food by the stomach, especially in exhausted patients, although rectal feeding is the rule during the first few days.

Before closing these general considerations, I wish to call attention to gastric distress produced by traction of adherent omentum. Billroth has written well upon this subject, especially in reference to the small buttons of omentum protruding through little gaps in the upper abdominal wall. Koenig reports some twenty cases operated upon. I have seen several cases of this description (863 and 1059, St. Mary's Hospital Surgical Record). The first, a boy of fifteen, with a small hernia of adherent omentum protruding through a little defect in the median line above the umbilicus. The second, a lady of fifty, with adherent omentum in a femoral hernia, both cases having no local symptoms at the site of protrusion, and both relieved by operation. I have also seen some cases of this form of omental adhesion with corresponding symptoms in connection with post-operative ventral herniæ. Wounds and injuries of the stomach are to be treated on surgical principles, and where evidences of perforative wounds are found operative repair is imperative. Rose speaks of persistent vomiting of blood as a reliable sign of gastric injury. In case there be injury to the head at the same time, however, the possibility of there having been blood swallowed from the upper passages should be borne in mind. Foreign bodies in the stomach are a not infrequent cause of danger and suffering, and gastrotomy for the purpose of removal has been greatly perfected. Richardson, of Boston, gives a careful analysis of reported cases, and makes many valuable modifications in the technique, when the foreign body lies in the lower œsophagus. Bull also reports excellent work in this direction. The value of a potato diet in the non-operative treatment of foreign bodies of the alimentary canal, should not be forgotten.

Fistulæ are, as a rule, the result of operative work, and rarely come from accidental or pathological causes. They vary much in the difficulty of repair on account of location, those adjacent to the bony framework being much more difficult of operation than those more remote. The great value of the provisional suture to prevent escape of stomach contents during manipulation, is at once apparent. Chronic dilatation of the stomach, when not due to organic lesion, may be caused by chronic gastric

catarrh with sagging of the fundus, rendering it difficult for the stomach to empty itself. Taylor, of Birmingham, has studied this condition carefully, and believes that it produces a kinking at the pylorus with prominence of the mucous fold, causing a bar-like obstruction to the emptying of the stomach. He practises operative dilatation of the pylorus with success. Bircher, followed by Weir, mechanically raises the fundus, and reduces its size by putting a longitudinal plait along its walls, turning a fold into its cavity. This operation is indicated in those cases where lavage for a length of time has failed to relieve the symptoms.

Ulcer.—In the diagnosis of ulcer, the age of the patient, the quantity of the vomit, the lack of emaciation, which in ulcer is more often a profound anæmia without great loss of flesh, the presence of free acid, and slow course of the disease, are all valuable symptoms of ulceration as against carcinoma. Operation may be demanded for acute perforation, provided it can be diagnosed in time. As can readily be perceived, the location of the perforation, whether on the anterior or posterior wall, will greatly influence the ease of repair. Ulcer of the stomach being most frequent on the posterior wall, occasionally a perforation may take place and the escaping material, on account of its mechanical surroundings, become encapsulated as a sub-diaphragmatic abscess. Weir points out the frequency of left pneumothorax due to the secondary results of perforative ulcer. A case of subdiaphragmatic abscess came under my care. (No. 1,537, St. Mary's Hospital Surgical Record.) A Scandinavian, fifty years of age, with history of chronic stomach trouble, became suddenly ill, developed pain, and later, cough and hiccough. A deep swelling became manifest in the sixth interspace just to the right of the sternum, for relief of which he entered the hospital. A deep incision was made and pus evacuated; but as a sinus formed and failed to heal, the cartilages of the sixth and seventh ribs and a large portion of the lower end of the sternum were resected. The sinus was followed through the diaphragm to the neighborhood of the lesser omentum, where a small cavity existed; this was packed with gauze and slow healing followed. The secondary results of ulcer, in producing contraction at the pylorus, may call for operation for obstruction, either the digital divulsion of Loreta, or better the Heineke-Mikulicz pyloroplasty. Weir reports a case of this character in which gastroenterostomy was performed, and in selected cases advocates its expediency.

Cancer of the Stomach.—The age of the patient, lack of free acid in the vomit, the emaciation, and the possible presence of peptones and albumin in the urine, aid in the diagnosis of cancer. Gussenbauer and Winniwarter give sixty per cent. as the proportion of pyloric cancer to the whole number. Bull, with statistics of thirteen hundred cases of stomach cancer, gives the proportion as above fifty per cent. in the pylorus. Butlin, in his classical work, says of these cases, that a very large number of cases of pyloric cancer die from obstruction before glandular infection or extensive adhesion takes place. Billroth, the great exponent of operative surgery of the stomach, says that cancer of the pylorus produces great muscular hypertrophy and death from obstruction in one-half of the cases, before adhesions or glandular infection supervene. It is probable, therefore, in the light of this knowledge, that pylorectomy and partial gastrectomy have a larger field than has been supposed, although Butlin, in a careful analysis of reported cases subjected to operation, takes a very gloomy view of the situation. For cancer involving the cardiac orifice, gastrostomy is advocated by Von Hacker for the purpose of feeding. Lauenstein has been impressed by certain unfortunate sequelæ of gastrostomy in these cases, such as constant leakage, involvement of the fistula, etc. With either the Witzel or Frank operation of gastrostomy this objection would not hold good, however. For cancer of the fundus, Bernays, of St. Louis, practises gastrotomy and curetting of the mass from within the stomach. He shows that in the majority of cases the growth of the cancer is toward its free cavity. The danger and difficulty of the operation exceed the benefit to be derived from it, in my opinion. In this connection an allusion to the remarkable disappearance or temporary checking of the growth of tumors after simple exploratory incision, would not be out of place. Tait first called attention to this phenomenon. J. W. White has gone extensively into this subject in regard to the curative value of operations of themselves, independent of their intention. The total disappearance of a cancer after simple abdominal incision must be very rare, but I have twice seen temporary checking of its progress after laparotomy. (Cases 368 and 571, St. Mary's Hospital Surgical Record.) In cancer of the stomach a varicose condition of the peritoneal veins overlying the growth is frequently observed on laparotomy, and is due to obstructed internal circulation leading to adhesions. In one hundred and twenty-four operations on the stomach and intestines, Billroth gives a mortality of fifty per cent.

Operations on the Stomach.—In stomach operations, the abdominal incision for most purposes will be the classical one of Fenger, parallel with the left costal cartilages, and, unless otherwise specified, is the one used, excepting for fistula and other conditions where there is no choice of locality. Gastrorraphy, due to the genius of Billroth, may be performed for wounds and injuries, the simple Lembert or a Czerny-Lembert suture being applied. For fistulæ, some special means of preventing escape of the stomach contents during operation must be used. The older method was to introduce a sponge with attached string, and hold this firmly against the opening. The provisional suture of the margins of the fistula is a much better practice, and in many cases, by trimming away the attached tissues afterward, can be left as a Czerny suture and the Lembert applied to roll it in; or the stomach being brought well out, the whole of the fistula may be cut out and the Czerny-Lembert suture applied. In 1891 Bircher invented his operation for simple dilatation of the stomach, by suturing a fold which projects into its lumen with a Lembert suture. Weir has practised this with marked relief.

Gastrotomy for Foreign Bodies.—Richardson, in 1886, recommended a large gastric incision and the introduction of the whole hand, if necessary, to remove bodies from the lower œsophagus. Much of our knowledge of foreign bodies is due to his labors. Bull recommends a small gastric incision, and with fingers introduced, invaginates the wall into the stomach cavity. In either case, several holding-sutures to manipulate the stomach with are better than the fingers, which may slip, or forceps, which may injure the vitality of the wound margins. Gastrotomy for the purpose of curetting cancerous growths has been performed by Bernays, but cannot be commended.

Gastrotomy for Dilatation.—In 1892 Loreta practised gastrotomy for the purpose of digital divulsion of the pylorus for obstruction. It can be performed for stenosis of either orifice of the stomach. J. W. Taylor has made gastrotomy several times for the purpose of digital dilatation of the pylorus, in cases of twisting at the neck of the stomach due to chronic dilatation, and reports successful cases. Heineke and Mikulicz, nearly simultaneously, performed pyloroplasty for cicatricial stenosis of the pylorus. As ordinarily performed, a gastrotomy is first made and a grooved director introduced through the stricture from the stomach, the contracted tissues are then divided by a longitudinal cut, and this incision is now united in a transverse direction by suture. This admirable operation has been performed by Senn and many other surgeons, with the best of results.

Gastrostomy for the purpose of feeding is indicated by any obstruction between the mouth and the stomach, if it cannot be relieved by less dangerous and more expedient methods. First performed by Sedillot in 1849, it has had a perilous existence, until in recent years the method known as Fenger's has usually been employed;

but its high mortality, the leakage, with its attendant loss of nutrition and irritation of the surrounding skin, made it but rarely resorted to. In preventing this leakage, Ferrier made the important suggestion that the gastric opening be made high up near the lesser curvature. Most operations up to this time were done in two sittings, the stomach being first sutured to the abdominal incision and the site of the future fistula marked by ligatures, to guide the opening after adhesion takes place. In a case of impermeable cicatricial œsophageal stricture, I was compelled to make a gastrostomy after this method for the purpose of feeding, and for retrograde dilatation and division after Abbe's string method. While the eventual recovery was good, the annoyance of the constant leakage was great. (Case 1,278, St. Mary's Hospital Surgical Record.)

Hahn modified the operation by making the opening in the stomach high up, and putting the fistula between the ribs for better mechanical closure. This is done by making an abdominal incision and locating the stomach, then a special short incision in the eighth intercostal space is made, and by passing forceps through this button-hole they can be applied to the proper place on the stomach wall by the fingers in the large incision, and the stomach fixed in the small opening, the abdominal incision being then closed. For retrograde dilatation of the œsophagus Von Hacker's method should be preferred, as, while it affords only a moderate degree of retention, it permits of excellent intra-gastric manipulation. The method consists of a perpendicular incision through the body of the rectus muscle, which gives somewhat of a sphincter action. Witzel's method is the best for temporary fistula, as it gives perfect closure against leakage. I have performed this operation once with the most perfect satisfaction. (Case 1,679, St. Mary's Hospital Surgical Record.) After the usual incision the stomach is drawn well out and a small cut made in its wall, through which a rubber tube the size of a lead-pencil is introduced one inch toward the fundus. With a Lembert suture the free walls of the stomach are drawn together over the tube, beginning one inch to the left and continuing to the right one and a half inch, forming a channel lined with peritoneum. The stomach is dropped back and sutured to the incision. The great advantages of this operation are that feeding can be commenced at once without any danger of leakage, and, on withdrawal of the tube, the peritoneal granulation lining the channel will heal permanently. This is of obvious advantage if the condition giving rise to the operation can be removed. I can heartily commend this operation from personal experience. Andrews, of Chicago, has modified this by free incision of the stomach and formation of a channel from the mucous membrane. This is done to avoid the use of a permanent tube, but has greater danger of infection and is difficult of performance. For permanent gastric fistula the method advocated by Frank is undoubtedly the best. In this operation a fold of the stomach one and a half inch long is drawn out and sutured to the parietal peritoneum at its base. The skin above the upper margin of the abdominal incision is undermined along the seventh rib to a point over the sixth rib, where an incision three-fourths of an inch in length is made. The stomach cone is now carried under the skin flap and the apex sutured to this button hole; the abdominal incision is then closed, giving a spout-like opening. This operation is a model one for the purpose of a permanent fistula. Great credit is due to Willy Meyer for the popularization of the Witzel and Frank operations in this country.

Resections of the Stomach.—With these operations the names of Billroth, Wölfler, and Czerny are inseparably connected, and it was their courageous work in the face of an appalling mortality which has made resection of the stomach a legitimate operation. Péan, in 1879, made the first pylorectomy, though unsuccessfully. The mortality of Billroth, the great exponent of pylorectomy, has been nearly fifty per cent., deaths being due largely to collapse, and a number to gangrene of the colon from injury to the meso-colon while separating the pylorus. This surgeon employs the transverse abdominal incision, resects the stomach in a V shape, using a close Czerny-Lembert suture in closing the gastric incision, and suturing the end of the duodenum into the lower angle of the stomach wound. The separation of the pylorus is very carefully done, and just sufficient of the greater and lesser omentum tied off to permit of operation. The greatest care of the meso-colon must be taken. The tendency of American and English surgeons, led by Bull, of New York, McCormick, Treves, and Greig Smith, of Great Britain, is to make the usual median abdominal incision, and after the pylorus is separated, to at once completely suture the stomach with the Czerny-Lembert suture. The pylorus is now cut away from the duodenum and the end of the latter sutured, gastro enterostomy being then performed. This carries the opening away from the dangerous suture line. Partial gastrectomy, as a rule, is a simpler operation, Maydl having once removed nearly one-half of the organ. Complete gastrectomy has been several times attempted, notably by Conner, of Cincinnati, but must fail on account of total destruction of the meso-colon. Ohage, of St. Paul, in the midst of a partial gastrectomy, was confronted by unsuspected difficulties which rendered removal impossible. The stomach was freely opened above, the malignant mass turned into its cavity, and the upper cut edge sutured to the wall below the growth. The patient not only lived, but for a space of two years has been practically well up to the present time. Gastro-enterostomy is indicated by obstruction of the pylorus, especially if this be malignant and not suited for pylorectomy. It was first performed by Wölfler in 1881, by suture, and up to the time of Senn's great innovation in the use of bone plates for anastomosis, the mortality was great—about fifty per cent. At the present time, performed by the aid of bone plates or the mechanical device of Murphy, it is a rapid and safe procedure. Postnikow has attempted to improve the suture operation by freely incising the structures of the stomach and gut to the mucous coat, which is ligated, and then suturing the corresponding parts together, in the expectation that adhesions will take place before sloughing of the mucous coat completes the fistula. In all of these operations, if the duodenum cannot be easily drawn to the stomach, a loop of the jejunum may be used and drawn around the omentum, which is pushed to the left rather than through its folds. The latter practice has in several instances caused death, from kinking of the intestine and obstruction.

Education and Cleanliness.—The Chicago school board has been discussing the question of cleanliness, and as a result, another innovation, the bath-tub, will be introduced into the curriculum of certain schools in that city. In several districts many scholars possess erroneous ideas regarding the proper degree of cleanliness, and henceforth those presenting an unhygienic appearance will receive a scrubbing. The boys will be immersed by the janitor, and the girls will take their ducking under the supervision of women who are employed as assistant janitors. The board deemed it essential that a child should know the value of soap and water, as well as the double rule of three or the theory of the tides. The plan to supply the schools with bath-tubs originated with Mrs. J. M. Flower, who recently retired from a three years' service as member of the board of education, and who is now a candidate for trustee of the State university. This procedure marks another step toward clinical teaching in the schools. Theoretical physiology has been taught children for years, but it has not kept them clean. Under the new *régime* pupils will be instructed in the practical application of this science by demonstrations in bathing, and proof of the superiority of this method of teaching the phenomena of the human body will be manifest on the surface.—*The Physician and Surgeon.*

A CONTRIBUTION TO THE STUDY OF THE CAUSE OF STRICTURE IN THE MALE URETHRA.

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The cause of stricture in the male urethra is a subject which, it seems to me, has not received the amount of attention its importance deserves in the majority of surgical text-books. Even in the special works upon the subject of stricture, while exhaustive descriptions of symptoms, diagnosis, and treatment are given, with clinical illustrations *ad infinitum*, still, when the authors come to consider the cause, they, with the single exception of Sir Henry Thompson, have passed briefly over this important field. From those authors who have devoted a few short paragraphs to the cause of stricture there have originated ideas and theories so contradictory, in some respects, that instead of throwing light upon the subject they rather confuse the same.

By some writers inflammation, especially gonorrhœal inflammation, is given credit for causing most cases of stricture. Others, again, differ, and in their efforts to reach a correct conclusion concerning this disputed point overstep the proper bounds by denying gonorrhœa a place as an etiological factor altogether. Thus John Hunter, one of the most profound surgical pathologists of his time, in describing the relation of gonorrhœa to the cause of stricture, says, "I doubt very much if it commonly or even ever arises from this cause."[1] Against this opinion we may array the words of Sir Astley Cooper, who says, "If asked what was the cause of stricture, I should say in ninety-nine cases out of every hundred it was the result of gonorrhœa."[2] The writings of Hunter show that he believed almost exclusively in a congenital or anatomical cause for stricture, while the words of Cooper prove that he considered the condition an acquired one in nearly every instance. Both of these famous old surgeons were right, to a certain extent, in their convictions, but as is the case with most vexed questions, the truth lies between the two extremes; and in the course of my remarks I will endeavor to prove that in the majority of cases both a congenital defect and an acquired pathological condition are essential to the formation of close organic stricture.

Sir Henry Thompson, in his book on stricture, third edition, page 120, give a table of cases, 220 in number, in which the antecedent or supposed causes were as follows: Gonorrhœal inflammation in 164 cases; injury to perineum in 28 cases; cicatrization of chancre in 3 cases; cicatrization following phagedena in 1 case; congenital, including cases in which the urethra may have been small from malformation, and those in which marked irritability of the urinary organs existed from childhood, accompanied by an unusually small stream, 6 cases; poisoning by nitrate of potash, lithotrity, masturbation, of each 1 case; inflammatory stricture, including temporary stricture and retention from a sudden acute inflammation, usually caused by some excess, and disappearing by resolution, 8 cases; spasmodic stricture caused by irritation about the rectum, 2 cases; spasmodic stricture, no cause assignable, 2 cases; spasmodic stricture caused by undue acidity or alkalinity of the urine, 3 cases.

This table has been extensively quoted by other modern writers upon genito-urinary surgery and about represents the prevailing belief, as regards cause and effect and the proportionate percentage of each, up to the present time, with possibly two exceptions, namely, the congenital variety and those attributable to masturbation.

The former (congenital stricture), thanks to our modern exact methods of urethral exploration, are more and more frequently recognized. The latter (masturbators' stricture), which from one case in two hundred and twenty as quoted from Thompson's table has increased (though I cannot accept the fact) proportionately to thirteen out of every one hundred cases, according to Dr. Samuel W. Gross.[1]

Before entering fully upon the discourse of the subject I will preface my remarks with the admission that I accept every one of the causes of organic urethral stricture quoted from Thompson's table as having an important part to play in their formation, but with the exception of the traumatic variety and those following the cicatrization of venereal ulcers, I claim that all the other stated causes act secondary to pre-existing anatomical defects.

The chief source of error, so it appears to me, is that most writers, in describing the lesion, seem to regard the urethra as a tract anatomically perfect in structure and physiologically normal in function until its owner is unfortunate enough to acquire some form of urethritis, then, after a variable period of time, the urethra, having fretted under a lingering gleet, is examined, and if found contracted at one or more points a diagnosis is recorded of stricture—due to the variety of urethritis from which the patient has suffered.

How many physicians, when confronted by a case of stricture which seemingly may have originated as described in the preceding paragraph, will pause to consider how much the urethritis has had to do with the cause of the stricture? How can gonorrhœa, for example, make such serious inroads upon the integrity of the parts? The explanation, based upon anatomical grounds, is simple. It is because all urethræ are not perfect in structure. An overwhelming proportion have extensive congenital defects of such a nature as to favor the perpetuation of inflammation and its sequelæ once it has been established. The urethra is not an exception to other parts, but is as often the seat of irregular development and malformation as is the nasal septum, the hard or soft palate, the upper lip, and other structures in the mesial line of the body which are formed by fusion of opposite surfaces.

From the researches of the embryologist we know that during the early period of fœtal development the genital furrow exists as an open tract, and that between the third and fourth months the free edges of this tract coalesce or fuse together, leaving a crevice which constitutes the spongy portion of the urethra. Now it is coincident with this period and process of fœtal development that the first departure from perfect anatomy occurs. The edges of the genital furrow may unite irregularly, the normal limits may be exceeded at one or more points, so that instead of a free tract capable of expanding into an even open canal when required, we have bands and narrowings more or less abrupt along this tract which interfere with this free action. These congenital bands, if not prominent enough in early life to cause trouble, still are capable, even from natural laws, of acquiring greater prominence, while if seconded by pathological conditions they become formidable obstructions. These congenital bands, or, as we may very properly call them, embryonic strictures, may be divided into two classes according to the character of the tissue of which they are chiefly formed.

The first and most common variety consists of folds or puckerings of the urethral mucous membrane, but, unlike the natural folds, they reduce the limits of expansion at those parts of the urethra where they are situated. They are permanent and cannot be obliterated by any method of dilatation or condition of the penis. I say condition of the penis, because Otis,[2] in describing the folds so frequently met with at the peno scrotal angle, refers to a case where the folds disappeared during an erection of the organ. Folds of that conditional character are not included in this class. The true mucous fold is a permanent structure, and no matter whether the penis be flaccid or erect can always be demonstrated by the bulbous bougie. This variety of congenital narrow-

[1] Ricord and Hunter on Veneral Disease, page 151.
[2] Surgical Lectures, reported in the Lancet, vol. iii.-iv., page 222.

[1] Gross on Disorders of the Male Sexual Organs, 1st ed., p. 25.
[2] Otis, on Stricture of the Male Urethra, 2d ed., p 212.

ing is described by some writers as an adhesion of the mucous surfaces. Englisch[1] found forty six such examples in the urethral canals of new-born infants.

The second class of congenital narrowings differs from the first in having, in addition to the mucous fold, a tough, fibrous connective-tissue base, over which the mucous membrane is sometimes freely movable, though it may be adherent. This variety varies much in width and thickness, and sometimes the fibrous tissue is as tough as tendon. This class is described by some writers as cicatricial. Englisch also mentions having found thirty-nine examples of this variety in the urethral canals of new-born infants. These congenital urethral bands are very frequently met with in the adult, but because they are so constant in their occurrence we are not justified in considering them physiological in the full sense of the word.

The rule first proposed by Dr. F. N. Otis, in regard to a fixed relative proportion between the circumference of the flaccid penis and the internal urethral calibre, is a most reliable working guide, and though, as previously stated, most urethral canals have slight departures from this high normal standard, not sufficient in many instances to interfere materially with the function of the parts, still their frequent existence does not remove them from the domain of congenital imperfections. I am satisfied, from a large number of personal observations, that the nearer the urethra approaches the relative proportions as described by Otis, the more perfect are its functions performed; while if pathological conditions are acquired, the symptoms are milder and more promptly recovered from. It is an easy matter to demonstrate the existence of these congenital defects, but having done so, a more difficult problem arises, namely, when to class them in the category of true strictures. This was, and still is, a much-mooted question among the leading genito urinary surgeons, and has given rise to some of the most heated discussions of any topic within the realm of surgery.

Otis,[2] for example, is responsible for the following assertion: "If into a urethra, the normal calibre of which is equal to a circumference of 30 mm. of the French scale, only a 29 F. bulbous bougie will pass without detecting obstruction, then the urethra is not 'about right.' It is strictured to the extent of one millimetre in circumference, and never can be a healthy urethra while that stricture remains."

Keys,[3] on the other hand, takes a very different, conservative view concerning these congenital narrowings, and because they are not of pathological origin depreciates their importance almost as much as Otis magnifies the same. He says: "I have raised my voice for what it may be worth, in protest against the views of the new school in urethral pathology, which seems to claim that every natural undulation in the tissues of the pendulous urethra is a stricture fit for cutting; and that all the ills of the genito-urinary passages may be accounted for by the existence of these undulations, and, usually, made to disappear when the latter are cut."

Finally, Berkeley Hill,[4] in a few masterly lines, seems to strike the happy medium, and is very conclusive upon the question at issue.

He says: "If the balance between the natural expulsive force of the bladder and the friction along the urethra is disturbed, the bladder is irritated, the kidneys are affected, and the beginning of the long chain of events which terminates not infrequently in death is made."

The vesico-urethral balance to which Hill refers is a far more important factor in normal micturition than is generally supposed. That nature often fails to make a perfect urethra does not admit of a doubt, nor is there any doubt but that nature, as often, develops an unusually powerful detrusor muscle, therefore, the expulsive force of the bladder may be so great as to irritate moderate congenital narrowings in one case, where, in another, with even greater urethral defects, but less powerful detrusor, there may be no discomfort whatever. If this were not the case more persons having these congenital narrowings would be complaining of serious symptoms than we find in actual practice. Thus we have to consider, hand in hand together, both the anatomical defects and the symptoms of disturbed vesico-urethral balance in order to decide when a congenital narrowing is to be classed as a true stricture. A narrowing is always a stricture, anatomically speaking, but not so clinically, unless it be attended by symptoms.

Congenital stricture, in proportion to its extent, often gives rise to troublesome symptoms in early life. Vesical irritability, nocturnal incontinence, dribbling of urine, priapism, and precocious sexual habits, are in many instances due to this cause. Similar symptoms to the above have been noticed time and time again by some of the leading genito urinary surgeons, but, strange to say, none have ventured an explanation.

Sir Henry Thompson, in his book on stricture (3d edition, page 127), says: "There appears to be a tendency, strongly marked in some individuals, to irritability of the urinary organs, displayed first in early life, of which no precise explanation can be given, but which has sometimes been observed to precede the formation of stricture in adult age. The subjects of it suffer as children from obstinate incontinence of urine, particularly during sleep." Again he remarks: "If such individuals acquire a gonorrhœa, the attendant symptoms are more than usually severe and distressing, and permanent stricture is likely to follow. This state may be spoken of as one of congenital irritability of the urinary organs, but I have no solution of it at present to offer."

To my mind I do not think it possible for a more graphic picture to be drawn of the symptoms and effects of congenital stricture than is embraced in Thompson's account of what he terms, "congenital irritability." It is the key to the whole situation. If there exists this irritability there must be a cause for it, and, as the learned author very truly remarks, it (the irritability) "has sometimes been observed to precede the formation of stricture in adult age," what more convincing proof do we want than that congenital stricture existed in these cases from the beginning, and that the irritability is but an effect of their presence?

If in a case presenting such symptoms the prepuce is non-adherent, and the bladder is free from calculus or disease, depend upon it the clew to the trouble will be found in the urethra.

In my experience with the treatment of urethral troubles I have many times had related to me histories similar to the above-quoted description from Thompson, by patients whose memory and veracity were perfectly trustworthy. The following case will serve to illustrate:

Mr. C——, aged twenty-five, consulted me, in March 1881, on account of a most distressing irritability of his bladder. The symptoms had been especially marked since his nineteenth year. He stated that nocturnal incontinence had been a source of annoyance to him when a child, and that priapism was very persistent, at the same period of his existence, without excitation or known cause. About the period of puberty he began to experience severe cutting pain every time he passed his water. The pain was felt immediately within the meatus and only as the first rush of urine impinged upon that point —after commencing the act the balance of urine could be voided without trouble. This symptom persisted for many months, then gradually became less acute, but he was ever afterward bothered by disagreeable sensations within the urethra and other parts of his genitals. A feeling of fulness would persist in the urethra after urinating, followed by dribbling some minutes later. Severe neuralgic pains were for a long time felt in the gluteal region and over the hypogastrium. His urine was normal in character, but no system of medicine had ever

[1] Quoted from Belfield's work on Diseases of the Urinary and Male Sexual Organs.
[2] Stricture of the Male Urethra, 2d ed., pp. 94, 95.
[3] Keys on Venereal Diseases, 5th and 6th pages of Preface.
[4] Lectures reported in the Lancet, April 8, 1876.

given him relief or blunted his ever-pressing desire to urinate. Thinking that his trouble might be due to some urethral abnormality, I examined the parts with bulbous bougies and an expanding meatoscope. The result of which examination was the discovery of a simple mucous fold, one third of an inch from the meatus, reducing the calibre of the canal at this point to 23 F. Lower down, at the peno-scrotal angle, were three distinct bands reducing the calibre of the canal at this point to 27 F. His normal calibre at all other points was 30 F. I cut the anterior contraction up to 32 F., and dilated daily with full-sized sounds until healing was complete. The result was immediate and surprising.

Before the cutting this patient was incessantly teased by an ardent desire to urinate. Thirty-six hours after, he retained his water ten consecutive hours without the slightest inconvenience, and then only urinated out of curiosity to know (as he expressed it) if his kidneys were fulfilling their function. Years have now elapsed and he remains perfectly comfortable. There never has been the slightest return of his old symptoms.

From the history of this case it will be seen that unusual irritability of the urinary organs existed from childhood, as in the description given by Thompson, also that all the symptoms were aggravated in adult life. An examination, however, according to the method of Otis, proved the existence of congenital stricture in my case (the patient never having had gonorrhœa), and though the narrowing only reduced the extent of urethral expansion 6 mm., still, this congenital narrowing was the sole cause of the existence and persistence of the symptoms, as was proved by a radical cure of the trouble upon restoration of the canal to its full calibre.

When these congenital narrowings are not prominent enough in early life to cause trouble, and the periods of infancy and childhood are passed in comfort, still, the maturing youth may fall heir to many distressing symptoms as he merges into puberty. This peculiarity can be accounted for, I think, as follows: When the genitals are undergoing rapid development in early adult life, those congenital defects which were in existence, but not of sufficient prominence to cause trouble, at this time acquire greater prominence through failure of the defective areas to enlarge in proportion with the normal parts, so that a canal which before puberty may have been sufficient for the requirements of nature now becomes too defective to perform its functions without disturbing the vesico-urethral balance.

As was stated at the beginning of this paper, John Hunter[1] recognized a congenital cause as the starting-point of stricture. He says: "Strictures are common to most passages of the human body," "They sometimes happen in the urethra where no venereal disease has ever been."

This opinion of Hunter, it is needless to say, has been severely criticised. To use the words of Sir Henry Thompson, "the great pathologist . . . stands almost alone in this opinion." If so, let it be to his credit. For Hunter more than a century ago, without the assistance of ball probes, bulbous bougies, or the urethrometer, but guided by his wonderful perceptive genius alone, arrived at about the same general conclusion which some at the present day consider new. His opinion has outlived him and affords us the most satisfactory clew to the cause of stricture. Bryant, in his "Practice of Surgery," page 518, says, in summing up his statistics of stricture cases, that out of 646 cases in only 273 was the lesion preceded by venereal disease, 43 were of the traumatic variety, leaving 330 in which no definite cause could be assigned. He concludes as follows: "That although gonorrhœa often precedes a stricture, that at least half the cases are found in subjects who have not suffered from such a disease."

Having occupied the attention of my readers long enough with the foregoing observations upon the relative frequency of congenital stricture, let us next proceed to study how these congenital defects are influenced by pathological processes, and how they form the nuclei, so to speak, of those close organic strictures which have hitherto been generally considered as entirely of acquired pathological origin.

In speaking of the relation of gonorrhœa to stricture Otis[1] says: "I recognize the fact that it is most often brought to our notice through the occurrence of and persistence of this disease, and that all pre-existing strictures, or thickenings, or irritations of the urethral mucous membrane are increased and intensified by it."

With this opinion I perfectly agree. It has occurred in my experience, and I think the same is universal, that cases of gonorrhœa will not always yield to any form of constitutional or local treatment. In spite of all care it may linger on indefinitely, nay, symptoms of stricture manifest themselves during the early period of the disease. Now with the knowledge we possess in regard to the formation and nature of cicatricial tissue is it at all likely that we should have such prompt effects resulting from an attack of gonorrhœa in a canal previously free from congenital defect? Furthermore, from a system of treatment, once the most popular (I refer to gradual dilatation), we derive most positive proof that congenital strictures do exist before and are the nuclei of those which are supposed to have resulted entirely from gonorrhœa. Any surgeon who has had much experience in the management of urethral cases has certainly come across strictures which respond finely to the method of gradual dilatation until a certain limit is reached, but beyond which it is impossible to progress without the strictured parts becoming irritable under the method of treatment. This class of strictures are mentioned by Van Buren and Keys in their work on "Genito-urinary Diseases," page 157, but no explanation is given for their exceptional peculiarity.

From the convictions that I have arrived at, after a careful study of the congenital urethral narrowing when intensified by inflammation, the cause of this irritability seems apparent, and I will venture an explanation for what it may be worth. When a stricture is treated by the method of gradual dilatation, the mechanical action of pressure, together with the stimulus given to the circulation in the affected parts, promotes the absorption of the acquired inflammatory tissue, which will go on under the gentle use of the sound until the original or congenital narrowing is reached, but the tissue of the congenital contraction, unlike the acquired inflammatory tissue, being unyielding and incapable of absorption, resents the attempts of art to enlarge by dilatation structures which nature had in the first instance failed to make of greater calibre.

Sometimes the gleety discharge and other troublesome symptoms disappear when the urethra has been dilated up to its point of limitation, but you cannot depend upon it, for when a congenital stricture has once been infiltrated by gonorrhœal inflammation it becomes a treacherous spot, prone at any time to light up trouble from the slightest provocation.

As a rule these congenital narrowings are sensitive to a degree far exceeding the other portions of the urethra. They easily fret and become irritable, even from contact with an exploring instrument. This irritability is quickly called into play by inflammation affecting the urethral mucous membrane, and as it happens that gonorrhœa is the most common form of acquired inflammation the urethra is subjected to, it necessarily becomes the chief intensifying cause of congenital stricture. Under the irritating influence of the gonorrhœal inflammation these congenital strictures are thrown into a spasmodic state of contraction and retain a certain amount of the acrid discharge within the canal instead of permitting an easy escape of the same—simulating small pus pockets at one or more points along the urethra.

The more abrupt the congenital contraction the more acute, generally, will be the symptoms, and from an in-

[1] Ricord and Hunter on Venereal Disease, p. 151.

[1] Stricture of the Male Urethra, 2d edition, p. 171.

flammation which was at first confined to the mucous membrane we have the morbid process, at these defective points, extending into the deeper structures and not infrequently involving the erectile meshes of the corpus spongiosum. Therefore, as a result of gonorrhœal inflammation, the tissues composing these congenital narrowings, and the parts immediately behind them, are more unfavorably acted upon than the other portions of the urethral tract. Bathed in pus and scalded by urine, the healthy epithelium is destroyed at these points and its place supplied by patches of granulation tissue; connective tissue corpuscles infiltrate the parts, and as the latter proliferate and condense, the calibre of the urethra is lessened, and we have formed those dense inodular strictures, the bugbear of urethral surgery.

If the urethra is well developed from end to end—free from prominent congenital narrowings, approaching the highest normal type, as described by Otis, I believe we can safely say that if such a urethra should become affected by gonorrhœa the attack would prove mild and in due time leave the parts unscathed by the ordeal through which they have passed.

Next in importance to gonorrhœa, if not equally as important as a cause for aggravating these congenital strictures, is pathological urine.

The urethra in repose is a collapsed tube which only becomes a canal in reality during the physiological acts of micturition and emission of semen.

When these acts are completed by a normal urethra the combined action of its muscles, together with the wave of blood which passes along the meshes of the corpus spongiosum should extrude every drop of fluid and leave the urethra free from all traces of moisture except its normal secretion. If, however, there should exist congenital narrowings anywhere between the bulbomembranous junction and the meatus of sufficient prominence to cause undue friction during the acts of micturition this perfect functioning of the parts cannot occur. The narrow points will be rendered unduly irritable by the forcible impact of the column of urine, and through the resulting contraction of the urethral muscular fibres interfere very materially with the extrusion of the last drops of urine. A few drops of urine will be retained back of the irritable urethral narrowing, where, acting in the way of a foreign body, it causes any amount of uneasiness until it is expelled. Nothing is more common than to hear persons, in whom this condition exists, complain of a sense of fulness in the urethra after urinating. They are apt to imagine the act was incompletely performed, and most likely will make another attempt shortly after in order to ease themselves; but if so, they only displace the retained drops in the urethra by a little more urine from the bladder, which leaves them in the same uncomfortable plight as before. Sometimes the drops of urine are retained quite a while before they dribble away, or, as is frequently the case, the patient, in making a quick muscular movement, as in rising from a chair or stooping to pick some object from the floor, forces the retained urine from his urethra, with immediate relief.

When effects like these are noted from the action of healthy urine upon the narrow defective points in the urethra, it is easy to understand how much more trouble is likely to ensue from a pathological secretion, such, for instance, as the urine of a gouty or rheumatic subject, that of the habitual dyspeptic, or urine containing inflammatory products, the result of disease in the upper urinary tracks.

These abnormal secretions are very damaging to a urethra previously crippled in conformation, and are just as sure to lead to the formation of close organic stricture as is a gleet resulting from gonorrhœa.

The irritation resulting from pathological urine is a slow-acting cause, and, therefore, all the more dangerous, for from the insidious nature of the symptoms neither patient nor physician is apt to have his attention directed to the forming stricture until it has assumed formidable proportions. On account of the slow development of this form of stricture we are most likely to encounter them in persons of middle age and advanced life; and I am of the opinion that if a careful investigation is given to that vast percentage of stricture cases which occur in men who never have had venereal disease, a satisfactory clew to this cause will be found under this heading.

Last in order, as a cause for intensifying congenital stricture, is masturbation. While it is a fact that this unnatural habit is entitled to a place among the recognized causes of urethral stricture, still, from the histories of most of the recorded cases, I am far from convinced that it is as potent a cause as some writers seem to think. It is easy to understand that by the persistent practice of masturbation a congested state of the prostatic sinus is induced which finally develops into a catarrhal inflammation—a condition of affairs attended by a muco-purulent discharge, a prostatic gleet in fact, which, like the gleet following gonorrhœa, is irritating and capable of intensifying pre-existing congenital defects. But without inflammation and a discharge first being excited, I fail to see how the habit of masturbation can cause stricture.

Yet how many cases of stricture due to this cause have of late years been reported! Many that are said to be due to this habit must, from the appended histories of the cases, have preceded the practised vice. In fact nearly all are nothing more or less than prominent congenital strictures. Because these strictures happen to exist in the urethral tracts of patients from whom a confession of the habit of masturbation has been forced, they have wrongfully been attributed to this cause entirely.

From among the tabulated cases of urethral stricture by Otis,[1] I find that out of a list of 234 patients, in 24 cases the cause is attributed to masturbation. I have not included any among the number who have a record of both gonorrhœa and masturbation. Now in 22 of these cases there is no history of an existing or pre-existing discharge. Also in 22 cases the contracted areas were situated in the anterior and middle portions of the urethra—not beyond three and one-half inches, just where we most frequently encounter the greatest number of cogenital narrowings. In the remaining two cases the contracted areas were situated at a depth of four inches and beyond. All were typical examples of stricture of large calibre, but from the histories of at least twenty-two of these cases I am forced to believe that the same contracted areas would have been found even if the patients had not been addicted to masturbation.

In not a few instances I have had patients who were suffering from the effects of congenital stricture, and who were not given to masturbation, describe their symptoms as follows: They would complain of an itching or tingling sensation within the urethra, and especially about that part enclosed within the glans penis; sometimes sensations not unlike an impending orgasm would be experienced, but without being attended by erection or erotic fancy. The strictures in these cases were situated a short distance from the meatus, and with their removal the irritations vanished.

Had these patients been addicted to masturbation how natural it would have been, backed by modern theory, to have ascribed both the stricture and reflex irritation to that habit?

Of course it must be admitted that like symptoms can be produced in some patients by the reflex irritations proceeding from a congested prostatic sinus induced by masturbation or excessive venery; but to attribute all these congenital narrowings in people who do masturbate to a habit which in most cases has had nothing to do with their existence, is as ridiculous as it is unfounded. Again, reasoning from a hypothetical stand-point, if sensations of the above nature were to be experienced by persons of little self-control, is it not more than likely that they might yield to these morbid feelings and acquire the habit of masturbation? No one will dispute the fact that patients who suffer from vesical calcu-

[1] Stricture of the Male Urethra, 2d ed., pp. 136 and 324-350.

lus or adherent prepuce may acquire this habit from the irritability of the genitals, superinduced by their infirmities. Why not, then, from the reflex irritations due to congenital stricture?

From all the information that I have been able to collect upon this topic, it seems to me that stricture of the urethra is more to be blamed for causing masturbation than masturbation is to be blamed for causing stricture.

If, then, we take these congenital urethral narrowings as the proper basis from which most cases of stricture arise, and consider them in association with inflammation, we will find that, with the exception of the traumatic variety and those rather uncommon cases resulting from the cicatrization of venereal ulcers, nearly every case may be classified under one or the other of the four following divisions:

1. Congenital stricture (simple), including all anatomical narrowings which are prominent enough to interfere with the normal vesico-urethral balance.
2. Congenital stricture, aggravated by gonorrhœa.
3. Congenital stricture, aggravated by pathological urine.
4. Congenital stricture, aggravated by masturbation.

In concluding my remarks I am fully aware that I have not presented much that is strictly original, more able observers having grasped the leading features long before, but I have tried to reduce the subject to something like a system in the order of cause and effect, and if my words have any weight in this respect, I shall not have labored in vain.

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A PLEA FOR MORE RATIONAL MEDICATION.[1]

By W. P. OVERHOLSER, M.D.,

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A RETROSPECTIVE glance at the practice of medicine of the nineteenth century presents to our view marked changes in many of the theories of our science, and great revolutions in the practices of our art. Our advancement has been particularly marked by steps of progression and retrogression, by a construction and reconstruction of views, by a continual building up and tearing down of medical beliefs and opinions. In fact this tendency has been so evident, that the intellectual effort of the medical world of the past and present seems to have been, and continues to be, characterized by a propensity to frame hypotheses and manufacture theories to meet and explain the manifold phenomena of animal life in health and disease.

From the beginning of the history of medicine, when in the Grecian temple of Esculapius medical information was first recorded, and the first steps taken to reduce the art to a science, by registering on durable tablets of marble disease and its supposed cures, down through the hoary ages of the past on through the latest centuries, and even to the very threshold of the present time, empiricism has largely characterized our work, and experimentation in disease continues even with increased ardor, with but few positive remedial results.

The recent laboratory and microscopical researches in disease, and experimental work in normal and abnormal processes of the body, have contributed volume after volume to the literature of medicine; but notwithstanding the light these researches have given us, as to the origin, diagnosis, and course of many diseases, science has as yet failed, except in but a few instances, to prescribe for us rules, laws, and remedies which, when applied in certain conditions, will give us positive, satisfactory results. Correct theories or doctrines of any science must coincide with philosophical truth, and be confirmed by experiment and observation.

A system of practice of medicine rational in its basis, scientific in its measures, and eminently successful in its results, would be a system different indeed from the one we so much boast of to day. Absolute facts in medicine are comparatively few compared with its unstable hypothetical teachings. It is true that many of our generalizations have stood the test of future experience and have therefore been retained, serving as they do to give something more than empirical direction to intellectual effort; but sometimes, and alas! this is too frequently the case in medicine, the airy castle of theory is found too light to withstand the onset of progressive experience, and the structure of but yesterday is the ruin of to-day.[1]

Is it not true that the conscientious physician of the present who endeavors to gather from every resource at his command more light and knowledge of the mysterious phenomena of disease, is often confused by the various theories as to its origin, multitudinous remedies for its treatment, and ofttimes contradictory clinical experience as to its progress and termination? We speak not disparagingly of our science, nor do we seek to condemn the work of those of our profession whose untiring efforts and profound research have scattered light and knowledge in many directions. We are proud that we live in a period of the history of medicine when every means of research is used to fathom deeply into the mysterious workings of nature; yet in this age of advancement, as we look back over our field of work and find scattered all along the line of action the ruined remains of what we once thought to be scientific truth, but which have since proven to be fallacies and inconsistencies, we feel more forcibly impressed with the importance of testing in the crucible of truth the great mass and bulk of medical experience and medical teachings that are heaped upon us to-day, and accepting only the atom of gold that may be found among the dross.

It is a fact to be deplored that we find in medicine beliefs, theories, and practices that wear the guise of learning, that appear scholastic in their teachings and scientific in their measures, that are of no practical benefit whatever to us as practitioners. Let me ask what has become of many of the measures and remedies that not a few of our profession, but a short time ago hailed with wild enthusiasm and accepted with the utmost confidence in their efficacy. They need but a mention: Koch's tuberculin, Kleb's tuberculocidin, Brown-Séquard's elixir of life, and others of no better nature; what are they to day? Are they not simply humiliating memorials of the credulity and infatuation of the physicians who commended and prescribed them? Who can tell that many of the boasted remedies of to-day will not, like their predecessors, fall into disrepute, and in their turn serve only as monuments in the history of medicine to mark our mistakes and ever expose our faulty conceptions of proper medication.

We have no lack to day of medical literature, no lack of medical theories as to the proper treatment of diseases, no lack of medical remedies suggested. The very shelves of our bookcases groan with the weight of medical lore, and our text-books on therapeutics prescribe for us an untold number of remedies for the various ailments of the human body. In fact, our science is becoming so unwieldy, and contains so much that is unnecessary and impracticable, that the medical student of the present is compelled to wade through the misty labyrinths of this accumulated mass of existing doctrines to find a little practical truth.

We do not wish to unjustly criticise the teachings of honorable men of our profession whose superior talent, moral worth, and dignified bearing have immortalized their names in the history of medicine. We will ever bow in humble submission to, and hold in high veneration, the devotees of our science who seek to give us substantial truth, sound inductive philosophy, that will stand the test of practical experience and ever be re-

[1] Read before the Hodgen Medical Society at Harrisonville, Mo., October 4, 1894.

[1] Dr. J. Leonard Corning, Medical Register, Philadelphia, Pa., vol. iii.

tained as immutable principles of eternal truth; but in the present status of our medical science we do not feel like offering an apology for entering a plea for a more rational system of medication.

Scientific medication must harmonize with physiological laws, and thus facilitate nature to throw off disease. Wherever a diseased process is going on, nature is striving to overcome it. Wherever there is a deformity or impaired use of any part or organ of the body, nature tries to compensate for it. The contraction of the muscles with flexed thigh in hip-joint troubles is not the disease, but nature's effort to protect the joint by fixation. The hypertrophied and throbbing heart is nature's method of compensating for an imperfect valve. An abnormal elevated temperature of the body is one of the chemical results of her method of eradicating a poison from her tissues. The adhesions surrounding a Fallopian tube, or the vermicular appendix, is her inflammatory barrier to prevent the escape of septic matter into the peritoneal cavity; and so on, through the whole category of diseases, we will find that if we view their symptomatic phenomena from a proper standpoint, they are conservative processes and nature's best methods toward effecting a cure.

To study closely her own efforts in restoring abnormal conditions of the body to health, will ofttimes give us more light and guidance as to the proper management of disease than that given us by the ineffectual speculations of scientists, many of whom simply write books for a reputation, and by their plausible theories and logical deductions so well disguised in the garb of learning, receive the applause of the medical world for the so-called latest and most rational methods of scientific therapeutics. Dr. Aulde, of Philadelphia, Pa., says: "There are a considerable number of the medical profession who now claim to practise what is termed rational medicine as contra-distinguished from empirical medicine; but when the question is asked as to the precise influence which remedial agents have upon nerve-cells and protoplasm, no one can be found competent to answer."

Of recent years so much attention has been turned to the study of bacteriology, so elaborate has been the work in this direction, that there now seems to be a general consensus of belief in the bacterial origin of all infectious diseases.

Bacteriologists tell us that all communicable maladies, such as can be imparted from plant to plant, from animal to animal, from animal to human being, from one man to another, are due to micro-organisms. The infinite variety and multitude of micro-organisms—the part they play in the phenomena of fermentation and putrefaction, and in the general break-up of organic life—the incessant struggles of the living organisms against the microbes, has furnished a large field for investigation by our bacteriologists, and the measures which antagonize their action and destroy them in living tissue, seem now to be the greatest problem of the present age. This has given origin to what is called bacteriological therapeutics—a science that is to give us measures, medicinal and hygienic, that will prevent the multiplication of these infective agents in the human body and thus eradicate disease by antagonizing their action and preventing the baneful effects of their secretions and excretions (ptomaines, toxines, and toxalbumins) upon the normal cellular action of living tissue.

If the origin and course of all infectious diseases be found to be due to the presence of some form of bacteria, and bacteriological therapeutics can furnish us with germicides that are available and safe, a system of parasiticide medication that will successfully prevent the development and multiplication of the microbe in the body, then indeed might we boast at least of one branch of scientific therapeutics. But let me ask how many here to-day can testify, by practical experience, to the value of any medicinal agent that has thus far been given us, that will destroy in the body the Eberth bacillus of typhoid fever, the Klebs Loeffler bacillus of diphtheria, the streptococcus of erysipelas, the diplococcus of pneumonia, or even Koch's bacillus of tuberculosis.

Is it not a fact that bacteriological therapeutics has thus far proven to be much more beautiful in theory than useful in practice? The modern idea of scientific medication we believe is slowly drifting away from so much speculative investigation with bactericide agents, and that "the rational treatment of disease will be based more upon a knowledge of the effects which medicinal substances produce upon the function of the cell." [1]

A study of nature's own efforts in coping with disease ought to lead us to observe, and in a measure understand, the methods she adopts in effecting her own cures. The term *vis medicatrix naturæ* is familiar to us all, and frequently spoken of as the power by which nature cures disease; but the factors concerned in this process, and the true secret of her success along this line, are yet imperfectly understood. We believe, however, there is now somewhat of a lull in the enthusiastic labors of the bacteriological therapeutists, and that we find ourselves gradually drifting back to investigate more carefully the function of the cell in maintaining its integrity, resisting disease, and restoring normal cellular life in an unhealthy condition of her tissues.

A fundamental principle about which pathology and physiology are not any more at variance, is that man, as well as any other animal, and also vegetative organisms, is a reiteration of structure; however complete in its organization be the construction of a body, every single part and all of it can be traced to a radical, an ultimate element of living tissue—an entity—a cell—a little mass of protoplasm which eats, grows, accomplishes work, and then dies. The radical entity of which man is composed shows a repetition of the phases of his accomplished being. It is in continuous motion, its life being kept up by processes analogous to those of the complete organism. In this physiological radical of man, and in all other organisms, is exhibited the function of disintegration and reintegration of tissue—a continuous change of matter constructive and destructive, a ceaseless metamorphosis of cellular structures with accumulation and liberation of life-forces. It is physiological cell-function, with laws governing its action just as laws preside over the existence and health of the developed organism. All curing action, whether by nature herself or artificially by the medical practitioner, is bound to be within the limits of histolysis or histogenesis of the cellular elements of the body. A point we wish to notice in the practice of our work, is that our medicinal agents are administered to the developed organism for their effect upon a particular organ of the body, or for their effect observed upon the organism as a whole, without a knowledge of their effect upon the organized units — the individual cellular structures of which it is composed—which are the only ultimate living factors in the production of lesions of disease, the only ultimate living agents in eradication of the same, and the only living factors of the animal economy that can restore abnormal conditions to health. All forms of disease come from some modification of normal cell-function. All diseases that are cured by nature or medicine must be accomplished through the function of the cell.

Disease due to microbic infection is simply a perversion of the physiological cell-function, an effort of nature to destroy and eliminate the foreign elements from her structures. It is a conflict between the subject who is smitten and the particular micro organism which multiplies at his expense, appropriating his air, water, and pabulum, disintegrating his tissues, poisoning him by its secretions or by the decomposition which accompanies its development. Exacerbations of disease and crises are occasioned by particular efforts of nature to overcome the obstacles which she meets on her war-path. It is a phagocytic reaction of the organism to an irritant (Metschnikoff). Cells are phagocytes, hungry to devour any toxine or microbe that may find entrance into the

[1] Dr. Aulde.

blood. The physiological, chemical action of the cell, by these irritant poisons is changed to a pathological, chemical one. Nature seeks to cope with her intruders by instituting measures that are incompatible with their existence. If she fails, her failure is due to a lack of power to resume in normal proportion her work of disintegration and reintegration of tissue with the normal evolution of life-forces. Here I believe is the starting-point of scientific therapeutics. The morphological results of cell-function in health and disease, I believe, are the basis upon which must be founded all medical means of treating disease by rational and scientific methods.

When our science gives us a pathological chemistry of the cell, with the physio-pathological effect of medicine within the sphere of tissue metabolism—a cellular therapy, we may then hope for a substantial basis upon which to found our teachings of a system of rational medicine; and until then, as Bigelow has said, "Therapeutics will continue to be a sad mixture of stale antiquity with spurious enthusiasms, in new-fashioned crazes—the theories of but yesterday becoming the superstitions of to-morrow, and the practices based upon such theories the shuttle-cock of each doctor's battledore."

"Students of other sciences are not content with simple ideas, or even facts, but are intent upon discovering law. With unwearying energy they systemize their facts, generalize, and rearrange, and whenever a law is discovered it is hailed as a precious boon to many a glorious messenger of light. In the domain of medicine the energies of our students seem differently employed. The field is swarming with adventurers who seek only the discovery of new material, and here and there, as one sees a fact which in the light of his fancy appears to glitter, he seizes upon it with avidity and preserves it as a precious gem for a short time, when his fickle fancy casts it away to search for something new. And so they go on increasing the disarray and adding to the heap of rubbish that is fast accumulating on the field of medicine, ever seeking, never finding, searching for specifics and panaceas, deluded by mirages, but unwilling to profit by experience.

"Have we not enough of speculative medicine, enough of empirical practice, enough of ineffectual efforts to combat microbic diseases, by internal parasiticide medication? Let us halt for a time and rearrange our material, discard what is worthless, put in order what is valuable and reduce it to a rule. Our palates have been tickled long enough with the endless variety, but our stomachs are worrying for something substantial."[1]

As earnest and conscientious practitioners, let us ever hold fast to that which is good, and until our science can give us something better, let us not forget to ever turn and listen to the voice of nature and seek to heed more closely her admonitions in disease; for many of her symptomatic phenomena are but indexes pointing out to us her mysterious ways of cure. Let us be content to be her humble assistants and not aspire to be her chief, for nature's skill is higher than our own, and to understand fully her methods of dealing with human maladies would be true knowledge indeed. When rational medicine is the practice, we believe there will be more cautionary guidance and less active interference in the measures nature institutes for the cure of her ailments.

In conclusion, to get at the basic truths underlying a rational practice; to invigorate the field of medicine with a new life; to discover law for facts; to lay a foundation broad and strong upon which to build the superstructure of our science; we beg leave to enter a plea for a more thorough investigation into the pathological chemistry of the protoplasmic entities of man, ever bearing in mind, as physicians, that practical medicine to be really in fact, as well as in name, scientific medicine, must be based upon therapeutics of the cell.

[1] Dr. Rendell: Medical Register of Philadelphia, vol. iii.

THE NON-OPERATIVE TREATMENT OF UTERINE DISEASES.—EXPLANATORY.

By P. J. McCOURT, M.D.,
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In a previous paper upon this subject (Medical Record of May 13, 1893) I endeavored to describe so clearly the various procedures of the method of treatment, that the attentive reader might follow me without serious error; but that endeavor has failed of its object. Subsequent to the publication of the article, applicants for further information were very numerous; yet the queries propounded were usually brief, and were all answered by letter. Now that many have, in a measure, prepared themselves to apply the treatment and have met with obstacles, the extent of the answers called for renders reply by letter impossible. Anxious to see the method intelligently tested, and, if found worthy, generally adopted, I wish to give such details to the profession as will enable them to apply the treatment as successfully as I have done.

1. The preparation of the sponge should present no difficulty. A fine "Reef" sponge is best for use, and the exact proportion of hydrochloric acid to water is not constant. It should vary with the amount of calcareous matter in the sponge; but about one-half pound to the gallon will usually suffice. Of the potassium permanganate, cold water will dissolve the amount required in a few minutes. The bleaching fluid may consist of such solution of sodium hyposulphite (the sulphite has recently been found preferable) as cold water will make in about thirty minutes, 1 litre, and HCl 200 c.c. (200 to 1,000).

2. Cotton, wool, linteum, etc., cannot be substituted for the sponge-dressing; nor can the sponge be employed as an excipient for glycerin, since the latter will render the sponge nearly as hard and rough as sand-paper.

3. The sponge-dressing cannot be accurately adjusted to the parts through the speculum. The vaginal walls are best separated by the first and second fingers of the left hand, while the dressing is carried to its position and adjusted by the index-finger of the right hand.

4. When not corroded by the secretions, the sponge may be reapplied several times to the same patient, after being cleansed each time in the bleaching fluid.

5. Neither septicæmia, nor any appreciable approach to it (except in the breaking down of myomata), nor any serious inconvenience to the patient, has ever yet resulted from the application of these dressings, when properly placed and medicated.

6. At the beginning of a course of treatment the dosage should be very light, and the patient may be treated three times each week, rarely more frequently, for a month, or until such time as improvement is apparent; then twice, and finally once a week. There is danger, or at least waste of time, in overdoing the applications advocated in this treatment. If the patient be treated once or twice a day, as has been advised by one of my former students in this journal, peritonitis may result.

7. In treating cases of hypertrophied uteri, as the size of the organ diminishes the size of the sponge should be relatively increased, otherwise progress may cease, or the conditions may even take a retrograde course.

8. None of the materials used in this treatment can be supplied by me.

9. It is imperative, for the reasons assigned in my former paper, that the tinctures be made saturated, and from the fresh root or plant. The employment of other preparations for this purpose will be certain to defeat our object, and may injure the patient. The pharmacist should be able to make these tinctures in season, and to have them prepared where the plants grow.

10. The metric system employed has proven an obstacle to many of my readers. It is only necessary to remember that the litre contains the weight of 1,000 grammes, or the measure of 1,000 cubic centimetres. Hence, 3 grammes to 1 litre means simply three parts

to 1,000; 6 5 grammes to 1 litre means 6½ parts to 1,000; and so on throughout.

11. I am asked to specify the conditions in which variation of local temperature has been observed; and it is evident that this observation has been received with some doubt. Disproportionate elevation of intra uterine temperature has been found chiefly in connection with local hyperæmia; and the temperature has been found subnormal in some cases of induration, malnutrition, hydræmia, and other forms of defective hæmatosis. Surely these observations are not less credible than others of unequal axillary temperature, editorially noted in this journal, February 27, 1892, p. 240.

12. To vary the dosage on the sponge-dressing "by the fixed rules for individual cases," I meant that we may give a larger dose to a woman of strong, coarse, rigid fibre, than could be borne by one of fine, delicate structure—one who, in modern nomenclature, is a "sensitif," or what we so lately and erroneously called a "nervous temperament."

13. A careless reader—so familiar to all writers—tells me, while asking what others do in substance, "You condemn the use of iron, yet call it a valuable agent, and acknowledge that you prescribe it yourself. What are your indications for it?" I condemned no practice or practitioner, and merely took exception to the prevailing massive dosage of the metal, which repeated crucial tests with unvarying results had taught me to be both unnecessary and toxic. If the ears are pale and waxy, especially when viewed by transmitted light, iron is indicated. A person whose ears are red will rarely need iron. The drug may also give brilliant results in many cases when there is a deep, circumscribed redness of the face during pain or excitement, although in repose the face may be pale or yellow.

14. Evidence is curtly demanded as to "how the chemistry of the body can change ingested iron into the tannate?" I did not so represent the change, but the law of chemical affinity is not suspended within the body. Several articles of food—notably tea, coffee, etc.—contain tannin. This tannic acid will unite with iron on meeting it in the stomach, intestine, or elsewhere, to form the insoluble tannate of iron. The tannate thus formed will unite with animal tissues, living or dead, and remain permanently fixed in the body. It is unfortunate for many that none of these facts are given in our text books on chemistry. A number of the drugs named in the paper will, when indicated, dissolve this tannate of iron and eliminate it from the body.

15. A ready solvent of the viscid secretion of chronic cervical endometritis is not yet satisfactorily determined. A few drugs of undoubted value in this condition are now being tested. The best of these appears to be jacaranda gualandi, of Brazil; but I cannot yet commit myself to assert of any drug that it is a true remedy. It is still deemed best to remove the tenacious secretion by the mechanical means recommended in the paper, or by the curette, when the indicated remedies named will complete the cure.

16. In the treatment of uterine fibroids I have as yet nothing definite to add. When such tumors can be readily removed by operative means, this course is recommended. Where obstacles prevent, or danger threatens from operation, the sponge-dressing may be resorted to with a fair degree of confidence. In twenty-six cases thus far completed I have met with only two failures.

17. In treating erosions of the os uteri, etc., when the sponge-dressing adheres to the eroded surface, and its removal is followed by the discharge of arterial blood, it is evidence that a wrong drug has been used, and a re-examination of the patient will reveal the remedy to be employed. A very weak solution of silver nitrate, applied by the hair-pencil before the proper dressing, affords marked relief in such cases.

18. When stenosis of the os or cervix uteri presents, the first indication is to soften the cervical tissues, which are almost constantly indurated in such conditions, and then to open the cervical canal. Until the latter object is accomplished, further treatment may only waste time and irritate the organs involved. But once the cervix is dilated, and so maintained, the remedy is immediately distributed, not merely to the endometrium, but to the entire system, and free drainage will soon be established. It has been frequently observed, however, especially in young women, that stenosis and flexions yield spontaneously to the treatment without instrumental aid.

19. Pain or inflammation has rarely followed dilatation of the cervical canal, even when the patient had not been fully prepared for the operation, or when she had had a history of peritonitis. The dressing, charged with the sanguinaria co., combined when necessary with any other suitable remedy, will usually subdue pain and tenderness in a few minutes, after which the patient may ride or walk home with safety and comfort.

20. It is gratifying that so many of my correspondents seek adequate means for correcting excessive and deficient menstruation. The great majority of women who suffer from uterine diseases, lose by far too much blood each month; and but few other conditions can so rapidly make them prematurely old. I regard the normal menstrual period (some few cases of general plethora excepted) as being three, or at most four, days each lunar month; and that limit is usually established by a judicious course of the sponge treatment, whatever the menstrual history of the patient may have been. Abnormal menstrual flow may usually be corrected by a careful selection of the remedies named in my previous paper, guided by a study and appreciation of the characteristic secretions. If these fail—if we must treat the symptom instead of the patient—a valuable general remedy for menorrhagia may be found in savine, 1 to 12 of water. In scanty menstruation conium and pulsatilla are of equal efficacy.

22. The badinage lavished upon me for my "extravagant faith in medicine," would fill a small volume. This shower of spice may be gracefully accepted, since it disproves nothing, while I have proven my positions. But it is wise to bear in mind that our patients possess and adhere to a living faith in medicine, whether we do or not. They also have faith in us; and it is our duty to make that faith as well founded and abiding as possible. With this as well as higher objects in view, I have delved in many mines—have sought far and near for drugs of alleged value, and have studied in all systems worthy of the name. In nearly all I have been able to cull gems from the mass of detritus. The results of my search have been given without reserve to the profession, who can best judge of their value. I ask that those who have tested or who may test my method in practice, will report results in the columns of the MEDICAL RECORD.

To many members of the profession, in this and other countries, my grateful acknowledgments are due, alike for their welcome criticism and for their generous words of approval and encouragement. A reprint copy of the original paper will be sent on request to those who have not seen it.

233 WEST TWENTY-THIRD STREET.

Oliver Wendell Holmes as a Microscopist.—Forty-one years ago, Dr. Holmes, who was eighty-five years old on August 29, 1894, taught Dr. E. Cutter how to use the microscope with direct illumination. He had an arrangement of his own—a six-inch black disk fastened to the tube and graduated so that turning the disk would act as a fine adjustment. Dr. Cutter says that Dr. Holmes worked a good deal with the microscope in those days, and that the intellectual drill derived therefrom may have been used in literature. Is not the technical use of the microscope in college as good a discipline as the study of Greek? Surely the cyclops of the Odyssey would be better understood by one who has studied a living cyclops taken from a hydrant and shown under the microscope.—*The American Monthly Microscopical Journal.*

Progress of Medical Science.

Pylorectomy with Gastro-Duodenostomy Posterior.—Professor Kocher gives his method of excising the pylorus. (*University Medical Magazine.*) The incision is made in the median line, and is 10 to 15 ctm. long. The umbilicus is excised and all bleeding stopped. The tumor having been withdrawn as much as possible, small openings are made through the greater and lesser omentums, through these clamps are adjusted. The attachments of the omentum are then loosened from the growth and the latter enveloped in gauze. All bleeding is carefully stopped. A clamp, resembling an ordinary hemostatic forcep, is placed on the duodenum and an incision made between it and one applied on the stomach. He does not fear sloughing from pressure. The mucous coat which protrudes from the cut section is carefully cleansed with bichloride, 1 to 1,000. The stomach is then compressed by the fingers of an assistant, and clamps placed next the growth, an incision being made between them the growth is removed and the cut stomach cleansed and sutured shut with a continuous suture. This is then invaginated and another continuous Lembert suture placed above. The posterior wall of the duodenum is then approximated to the posterior wall of the stomach one-half or three-quarters of a centimetre behind the closed end, and the two are sewed together with a continuous sero-serous suture. The forceps being removed from the duodenum, all bleeding is stopped and its interior carefully cleansed. An incision is then to be made into the posterior wall of the stomach and the free edge of the duodenum sewed to it by a suture, either embracing all the coats or else two layers applied—one musculo-serous and the other mucous. The sero-serous layer of suture first applied is then continued all around. The cut end of the duodenum is thus fixed directly into an incision in the posterior wall of the stomach. Of six cases so operated on, one only died, and it on the twentieth day. Asepsis is insisted on, the lines of sutures being touched with gauze wet with sublimate solution. No washing of the abdominal cavity is to be employed. The continuous suture only is to be used. It is unnecessary to guard the forceps used to clamp the cut ends with rubber, because the pressure does no harm.

The Mechanical Treatment of Chronic Constipation.—Dr. F. Le Marinel believes that the mechanical treatment should be the treatment of choice in a large number of forms of chronic constipation. The manœuvres of massage comprise three forms—frictions, pressures, and percussions. In addition, various active and passive movements are undergone—flexion, extension, abduction, adduction, pronation, supination, rotation, and circumduction. The effects of medical gymnastics are studied as regards the circulation, respiration, animal heat, chemical phenomena, the muscles, bones and articulations, and the local results. The effect of massage upon the absorption, muscular system, nervous system, circulation, and local temperature are fully recorded. (*The American Journal of the Medical Sciences.*) The technique of various authors is fully described and illustrated. The various forms of constipation which are likely to be benefited are—(1) from anæsthesia of mucous membrane; (2) from muscular paralysis; (3) from induration of the stools, and (4) from mechanical obstacle. The contra-indications are—(1) acute inflammation of intestines, peritoneum, peri intestinal cellular tissue, or of intra-abdominal veins; (2) ulcerations (round, tuberculous) of stomach or intestines; (3) tumors of the alimentary canal (sarcomata, carcinomata, polypi); (4) voluminous fæcal masses of stony hardness. An interesting comparison is given of the value of diet, habit, purgatives, hydrotherapy, injections, electricity, various medicinal methods, with that described by the author, the general conclusion being that of all these methods only one can be compared to the mechanical, and that one is electricity. But when one considers the question from the standpoint of success, massage shows figures which are not surpassed by electricity. So far as facility of application, massage is superior in that it does not require any apparatus, and can be applied equally well at the house of the patient as of the physician. Further, massage is better borne than electricity, and particularly by children. A series of 147 cases is reported, the treatment being that advocated in the paper. The care shown in the report, the apparent accuracy of diagnosis, the fulness of detail, give an especial value to the clinical histories. In the cases cited, those of the synoptical table, and eleven in detail, 158 in all, radical cure was obtained in about ninety per cent. The final conclusions are: 1. Mechanical treatment takes rank among those therapeutic agents whose action is most energetic upon the circulation, the respiration, and general nutrition. 2. It can modify the abdominal circulation, and cause certain foreign congestions, notably those which are met with in abdominal plethora, to disappear. 3. Under its action the muscles acquire an increase in volume and strength. 4. It is the best curative agent in constipation dependent upon muscular paresis or paralysis, if it is not of central nervous origin. 5. It is the best curative agent for constipation dependent upon diminished sensitiveness, or anæsthesia of the mucous membrane when it is due to local causes. 6. Finally, it is formally contra indicated when constipation is due to acute inflammatory lesions or to tumors.

The Treatment of the Fever of Phthisis.—Dr. Savigny distinguishes three forms in this disease: 1, The initial or continued; 2, the hectic or concomitant; 3, the septic. In the last form the purely symptomatic treatment is powerless. The administration of the new antipyretics is not favorable, for all of them diminish the energy of the heart, only influencing the fever as a symptom, if indeed they have any notable effect, and they are only used in rapid tuberculosis, and when humanity demands only that the patient shall be made more comfortable. Hochhalt, after much research, has come back again to arsenic, but with the exception of recent initial apical catarrhs it has no influence upon the course of the disease. Hectic fever is manifestly influenced by this remedy, but it has no action upon the initial fever and upon the rapid forms of phthisis. Fowler's solution is recommended, in commencing doses of one to two drops, and increasing, day by day, to five or six; rarely more, for ten drops is quite likely to produce symptoms of poisoning. Other beneficial effects besides the lowering of temperature are the suppression of night sweats and an increase of appetite and body weight. The continued fever offers considerable resistance to the treatment by arsenic, for this fever is a manifestation of caseation, and is an expression of the clinical form of *phthisis florida*. By building up the system one can best combat the tendency to caseation. In these cases the condition of the heart and circulation is important; Brehmer and Dettweiler recommend the prolonged application of ice-bags; others use alcohol. Kühle and Liebermeister advise digitalis, which however, should be used with caution; but more advantageously the ten per cent. tincture of coronilla, in ten to twenty-drop doses, can be employed. In cases of initial fever without grave lesion of tissue, in association with fifteen grains of quinine, Hochhalt has seen this fever transformed into the intermittent type, where arsenical treatment is useful. In apyretic phthisis creosote is used; if at the outset it is not well borne by the stomach, it can be administered in cocoa-butter suppositories—with steady increase of all doses; in commencing with large doses there is danger of exciting the fever. In general the antipyretic treatment consists less in reliance upon the antifebrile remedies, properly so called, which have only a slight and transitory effect, as in the use of remedies which act directly upon diseased pulmonary tissue, than upon arsenic, the cardiac tonics, and nutrition by every means which can stimulate it.—*American Journal of the Medical Sciences.*

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THE NEW TREATMENT FOR DIPHTHERIA.

WHENEVER a new remedy is suggested for a prevalent and formidable disease it is quite necessary to exercise a becoming conservatism regarding facts which bear on the possibility of a brilliant discovery. The history of all similar cures proves that the initiative reports are not always borne out by subsequent results, and that nothing more is gained by a discussion of relative merits of other remedies than the ventilation of a new theory and the final mortification of its ultimate rejection.

On the other hand it must not be argued that students of therapeutics should be backward in seizing upon every plausible means to an end, or should neglect opportunities for the careful study of such data as may be presented with a proper spirit for deliberate judgment. Even in view of these apparent drawbacks we cannot resist the temptation of looking upon the antitoxin treatment of diphtheria as promising better than any that has heretofore been presented to the profession. Making due allowance for the remarkable percentage of cures, even in malignant cases, we can safely assume that if one-half of what is said of the antidotal power of the serum is true, we have made a most wonderful advance in the therapeutics of a most formidable and fatal malady. There is, indeed, enough encouragement in the astonishing results abroad to warrant an extended trial in this country.

The articles by Professor Baginsky, of Berlin, and Dr. Louis Fischer, of New York, in a recent issue of the MEDICAL RECORD, were calculated to arouse a new interest in the subject by calling attention to some remarkable results. The mortality of diphtheria in Berlin during the three years preceding the trial of antitoxin ranged from 32.5 per cent. to 41.7 per cent. Baginsky broke this record in one hundred and ninety-two cases by reducing the death-rate to fourteen per cent., while in eighty-two additional cases, making in all two hundred and seventy-four, the average mortality was 15.3 per cent. More recent statistics give in sixty-three cases a fatality of 5.5 per cent. In France, Professor Roux lowered the death-rate from 51.71 per cent. to 24.33 per cent. Viewed as plain facts the showing is certainly very remarkable.

The theory of the action of the antitoxin serum from a bacteriological standpoint at least is quite tenable, while clinically there are no obvious objections to its plausibility. It is in brief the transferrence of acquired immunity in an animal to a similar condition in the human subject. The natural resistance to the disease, the vital energies which are aroused to overcome the enemy, are sufficiently reinforced by the immune serum to turn the balance in favor of a cure. In a like manner the antitoxin is claimed to act in a protective way for such as may be exposed to the disease by a preliminary injection of immunizing serum, thus anticipating the evil effects of the disease by neutralizing its septic tendencies. So far the encouraging reports coming from Berlin and Paris are quite convincing, and, unless contradicted by more extended experience, warrant the brightest hopes for the future. There is certainly a singular agreement regarding the reduction of mortality as observed by different experimenters, which gives a truer scientific complexion to the facts than could be gained from partial sources or through biased channels. There is, then, every plausible reason why the antitoxin treatment should be thoroughly tested in this country. The great trouble at the start will be the scarcity of the remedy and the difficulty of obtaining it. This difficulty should be overcome as speedily as possible by extending its manufacture and in establishing necessary laboratories in different parts of the country. Thus far the only antitoxin that has been used in this country has come from abroad, and is now in such limited quantity as to be practically useless for purposes of extended experimentation. It is to be hoped, however, that ultimately the supply will meet the demand, and that opportunities may be afforded for such tests of the efficacy of this new remedy as seem to be warranted under existing circumstances.

LAUS GAMBRINO.

IT is rare that one finds a physician nowadays who gives that unqualified praise of beer, as compared with other alcoholic liquors, which was heard a few years ago. The tendency is rather to teach that "total" abstinence is best, and that beer is not much better than other forms of intoxicating drinks. The view once hopefully entertained, that beer was the best and safest beverage, and that its introduction into America would lead to an abandonment of spirits and to less drunkenness and alcoholism, is not now generally held. We read with some interest, therefore, an article in praise of beer by Dr. Lambert Ott, in *The Medical News*. The article is based on fifteen years' observation among beer drinkers. The class that Dr. Ott has studied is composed mostly of laborers and employees in breweries, the men being mostly Germans, but with a sprinkling of Irish and Americans. Some of these had drank from one to two gallons of beer daily for fifteen years without any obvious disturbance of the bodily functions.

Dr. Ott seems to think that beer-drinking has a distinct ethical value, for he says: "The German brewer is by nature an honest, industrious, and good-natured individual, fond of his home and family, and in every way a congenial person; even the Irish and American brewer partakes of those kind and congenial elements so common to the German brewer, leading one to believe that the constant association and use of beer as a beverage begets a distinctive type of humanity, possessing natures kind and pleasing. Often have I observed young men, of slight build, with no inherited predisposition to

obesity, after a year or two in a brewery acquire a sunny disposition and an accumulation of fat, the attenuated and introspective dyspeptic being transformed into the happy and fat brewer."

The blood of beer drinkers shows an increased proportion of red blood-cells and a diminution of white corpuscles. Excessive beer drinking leads to a condition of mental torpor, which soon disappears, however, when the cause is removed.

According to Dr. Ott, beer does not retard, but assists, digestion. However, in the summer time, when large amounts are poured into the stomach, a subacute gastritis may develop. Diseases of the heart and lungs seem uninfluenced by large potations of beer. Cirrhotic kidney and hob-nailed liver are never, he says, found in the beer drinker; neither does beer alone ever produce delirium tremens.

Altogether the beer habit, when not accompanied with other bad habits or the use of whiskey, is a healthful one.

Here, however, is the weak point in Dr. Ott's argument. The beer drinker is very liable to take other drinks after a while, and then bad results follow. The observations made upon a class of men who indulge in hard manual labor, cannot be applied to the community in general. It is the experience of most physicians that in this country, beer drinking, except in great moderation, leads to gastric troubles, and to gouty, rheumatic, and renal disorders.

DOCTORS WHO GIVE AND RECEIVE "COMMISSIONS."

What shall be done with that peculiarly contemptible species of huckster, which, protected by medical diplomas, sends gullible people only to those "consultants" and "specialists" who pay them an underhanded commission for their favors? That the thing is done admits of no doubt. But how to bring about exposure, and brand the medical trader and commission pedler as he deserves to be branded is a problem still requiring solution.

The *Philadelphia Polyclinic* is much exercised over this state of affairs, but has no practical reform suggestions to offer. According to this journal: "The *Tri-State Medical Journal* published a letter from a physician to a prominent consulting surgeon, asking what percentage he would pay for cases referred to him in consultation. Ophthalmic surgeons have all had experience with such offers from opticians, and Orthopedic surgeons from truss and brace makers. More than one hundred years ago it was declared reprehensible for a physician to enter into collusion with druggists and receive a percentage on the price of prescriptions compounded, and the declaration would hardly have been made if the practice had not existed. That it continues, and from time to time assumes new forms, we must also reluctantly admit. We will not here occupy space in arguing against the practice of the physician accepting a fee from a patient with the understanding that he is to give the best advice which his knowledge and experience enables him to offer, and then accepting a percentage or fee from somebody else in consideration of giving that advice a special direction. To any one who really has the slightest doubt as to the immoral and unethical nature of such a transaction, we would suggest this simple test. Would he be willing to do it openly and with the knowledge of the patient? Let the doctor who is captivated by the offer in question state frankly to his patient, 'I think you had better go to —— —— Sanitarium, the company pay me $100 for giving you this advice;' or, 'You must go to Mr. So and So to get your glasses, who will give me 33⅓ per cent. of the price you pay him for them, for sending you there;' or, 'You must consult Dr. Medicus, who gives me $5 for every patient I send to him.' The doctor who makes such an explanation to his patients, we believe has a perfect right to accept the stock or the percentage or the share of the fee. The doctor who accepts such compensation in secrecy, without any explanation to the patient of the nature of the influences under which the advice is given, belongs in the same class with the bunco steerer and the man that cheats at cards. The grocer who puts sand in his sugar, or the jockey that files his horse's teeth, are honorable in comparison."

Our Philadelphia contemporary calls upon the profession to put a stop to bribery within the ranks of a noble calling. Perhaps its pathetic outcry will be heeded. And then, again, perhaps it will not. The hardened sinner is generally too pachydermatous to be affected by "press notices." His moral sense resides in his pocketbook. To make him suffer, his emoluments must be reduced to the vanishing point. If all physicians would resolutely refuse association of any and every kind with the "commission doctors," the genus would soon become extinct. If Philadelphia will only lead, New York will gladly follow.

CIRCUMCISION.

Dr. Alexander L. Hodgdon, in the *Medico-Surgical Bulletin*, lays down some reasons why, in his opinion, all male infants should be circumcised. Aside from the stock arguments on this subject, we find nothing to support Dr. Hodgdon's position, except the statement that there are in the community two estimable classes among which the operation is done, viz., the Jews and the "physician class." Quoting Dr. Remondino, he says: "In the United States, France, and England, there is a class which also observe circumcision as a hygienic precaution, where from my personal observation I have found that circumcision is thoroughly practised in every male member of many of the families of the class—this being the physician class. In general conversation with physicians on this subject it has really been surprising to see the large number who have had themselves circumcised either through the advice of some college professor while attending lectures, or as a result of their own subsequent convictions when engaged in actual practice."

It will no doubt be somewhat of a surprise to our readers to learn that they belong to a circumcised, if not a chosen, class. We doubt if the facts at all support the assertions of the writers we have just quoted. In most cases the foreskin adjusts itself to conditions of perfect cleanliness at the time of puberty, if not before. Physicians are not so senseless as to unnecessarily mutilate themselves and their families. Circumcision is a relic of barbarous and semicivilized times, before soap and water and sanitation had been preached. It no doubt served a useful purpose among the nomadic tribes of

tropical countries. But in these days physicians should cease to preach or impose upon their patients an unnecessary and irrational mutilation.

The rite which in these modern times might be substituted for the early religious ceremony of circumcision would, according to some, be resection of the spermatic cord of the vicious and defective classes, so that they should cease to propagate their kind. Spermatorectomy will probably triumph over and replace circumcision, if anything does.

THE PREVENTION AND CURE OF SNAKE-BITES.

The early exploitation of a medical discovery in a popular magazine does not afford the best evidence that it is new and valuable. If, however, the discoveries of Dr. Calmette are not yet proven to the satisfaction of the scientific world, the confidence of the doctor in what he will be able to do is genuine and beyond the need of demonstration.

Dr. Calmette believes that by the help of his therapeutic serum the most venomous serpents will be rendered as harmless as doves. This substance will, he thinks, be kept in all the drug stores of India, Africa, and America, and will be carried in the pockets of all travellers and sportsmen who are exposed to the bites of serpents. The new antidote has been prepared and Dr. Calmette's investigations carried out at the Pasteur Institute. And the method employed is much the same as that used in obtaining the immunizing serum of diphtheria.

It is known that venomous serpents are not susceptible to the bites of their fellows, but that non-venomous serpents have not this immunity.

This furnishes some evidence that there is such a thing as being protected against snake poison. In order to induce the condition artificially, rabbits and guinea-pigs are chloroformed and then bitten by the cobra or viper, or are inoculated directly with the venom. The blood of the animals is then taken and its serum used as a protective against bites or inoculations of other animals. It is asserted that whereas the cobra bite usually kills the rabbit in one or two hours, if properly protected the animal skips around in as lively a manner as ever, no matter how severe the bite.

Dr. Calmette finds that besides his therapeutic serum there are two other substances which protect against serpent poison, viz., the chloride of gold and the chloride of lime, the last being much the better. He has not had an opportunity to try the chloride treatment on man, but his directions for such trial are these: "The chloride of lime should be free from absorbed water, and, when used, should in all cases be freshly taken from a hermetically sealed bottle. One part of it by weight should be dissolved in eleven parts of boiling water, and the solution should never be made until it is about to be used, as I have found that the therapeutic power diminishes by keeping. This should be injected subcutaneously with a trephine [*sic*] all about the wound, and also under the skin. From twenty to thirty cubic centimetres of the solution will suffice to save the life of a man bitten, it being administered in doses of five cubic centimetres each."

As to the immunizing serum, he finds that, generally speaking, about five cubic centimetres are necessary to make the animal proof against one milligramme of pure venom. He also finds that he can use three distinct specifics in vaccinating a rabbit, and by all analogy, a man, against the bite of the most poisonous snake, or as an antidote after they have been bitten. These are, first, the serum from an envenomed animal by itself; secondly, this serum mixed with chloride of gold or the hypochlorite of sodium or of lime; and, thirdly, either of these chemicals, or, preferably, chloride of lime, used by itself without serum.

Dr. Calmette has not experimented with rattlesnake poison, but he finds that the same antidote is good for all the other venoms he has tried, and he feels confident that it will answer for the rattler.

News of the Week.

Honor to a New York Surgeon.—Dr. Arpad G. Gerster has received from the Emperor of Austria and King of Hungary the high distinction of the Knight's Cross of the Order of Francis Joseph in grateful recognition of his valuable philanthropic labors in founding the Hungarian Emigrant Aid Association of this city. This is the first instance in which an American citizen has received this honor who has not held office under the Austrian government. It is eminently fitting also that a member of our profession should be thus closely associated with such noble work, and that he should be so worthily rewarded.

The Southern Surgical and Gynecological Association.—The seventh annual meeting will be held in the Artillery Hall, Charleston, S. C., on November 13, 14, and 15, 1894. Members of the medical profession are cordially invited to attend.

Chicago Gynecological Society.—At the sixteenth annual meeting of the Chicago Gynecological Society, held October 19, 1894, the following officers were elected to serve the ensuing year: *President*, Dr. Franklin H. Martin; *First Vice-President*, Dr. A. J. Foster; *Second Vice-President*, Dr. J. C. Hoag; *Secretary*, Dr. H. P. Newman; and *Editor*, Dr. T. J. Watkins. The retiring president, Dr. Fernand Henrotin, delivered an interesting annual address, after which the society adjourned to the annual banquet. Dr. John B. Hamilton, J. B. Murphy, Health Commissioner Arthur Reynolds, Alexander H. Ferguson and others were guests of the Society.

Dr. Pliny Earle's Bequest to Leicester, Mass.—The town of Leicester, Mass., has received $6,000 under the will of the late Dr. Pliny Earle, for the erection of a building for the public library of the town.

An Accident to Doctor Wiglesworth.—Dr. J. Wiglesworth, superintendent of the Rainhill Asylum, Prescott, Lancashire, England, was stabbed in the neck by a patient, who had obtained a sharpened staple; the internal carotid was severed, necessitating ligation of the common carotid artery.

Want no Physiology.—The Christian Scientists of Burlington, Ia., have petitioned the school board to excuse their children from attendance when physiology is taught. The petitioners declare that there is no material

body, and object to having their children taught to believe that there is anything so much in evidence as a stomach or a liver.—*Times and Register.*

Outbreaks of Small-pox.—A considerable outbreak of small-pox has occurred in Manchester, Mich., and neighboring towns, and is causing some alarm. Several cases of small-pox have occurred in Washington, D. C., recently. They have been traced to a case occurring in the family of an employee of the pension department.

Dr. Roux Decorated.—Dr. Roux has received from President Casimir-Perier the congratulations of the Government and the Cross of Commander of the Legion of Honor, in recognition of his work upon the serum treatment of diphtheria.

Foot-ball Casualties.—*The Lancet* of October 20th chronicles three deaths and four fractures as the result of the previous week's sport.

A Physician to be Trustee of the Boston Public Library.—Dr. Henry P. Bowditch has been appointed by the Mayor to be a trustee of the Boston Public Library.

The Antitoxin Treatment of Diphtheria in Vienna.—At the meeting of German naturalists and physicians held in Vienna last month, one of the most attractive subjects discussed was that of the papers of Professor Behring and Ehrlich on "Serum Therapeutics," and on the "Use of Behring's Antitoxin in the Treatment of Diphtheria." But neither paper brought any new facts before the meeting, and the most interesting communication concerning this question was made by Dr. Wassermann, of Berlin. He was endeavoring to obtain information on the question of idiosyncrasy as regards proclivity to or immunity from an infectious disease. For this purpose he withdrew a quantity of blood from persons who remained healthy though surrounded by persons suffering from diphtheria, and studied the effect of this blood on the diphtheria bacillus and its toxins. He found that the blood of such healthy persons destroyed the toxin of diphtheria, and neutralized tenfold its bulk of the toxin. In eight persons aged over forty years, he found in seven the same antitoxic property of the blood, while the percentage of younger persons possessing such antitoxic blood was lower, and reached only fifty per cent. of the children examined between four and fifteen years of age.—*Lancet.*

Professor Ludwig Mauthner, of Vienna, died suddenly of heart failure. He had just been appointed Professor of Ophthalmology in the Vienna University.

We Wonder if it be True.—*The Medical News* of Philadelphia remarks that the first statue ever raised to a medical man was erected in Brooklyn on October 20th, to commemorate the memory of Dr. J. Marion Sims. This bit of information will probably surprise Brooklyn physicians, as none of them seem to have heard of it.

Dudley Sharpe Reynolds, Jr., M.D., son of Dr. Dudley S. Reynolds, of Louisville; born at Louisville, February 20, 1873, died from the accidental discharge of a pistol, at Collinsville, Ill., October 22, 1894.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1895, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1895. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1894 has been awarded to Dr. G. E. de Schweinitz, of Philadelphia, for his essay entitled "Toxic Amblyopias." CHARLES W. DULLES, *Secretary.*

Another Post-Graduate School.—It will doubtless be news to many New Yorkers to learn that there is a third post-graduate school in this city. It is called the Metropolitan Post-Graduate School, and is homœopathic.

Obituary.

WILLIAM GOODELL, M.D., LL.D.,

PHILADELPHIA, PA.

DR. WILLIAM GOODELL, the eminent gynecologist, who had been in failing health for the last two years, died at his residence in Philadelphia, on October 27th, aged sixty-five years. Dr. Goodell was the son of the Rev. William Goodell, D.D., of Holden, Mass., and was born on the island of Malta, while his parents were journeying to Turkey, where his father was engaged in missionary work.

In 1849 he entered Williams College, Massachusetts. Graduating three years later, he came to Philadelphia and continued his studies at the Jefferson Medical College, and received his diploma in 1854. The same year Dr. Goodell rejoined his father in Constantinople, and there entered upon the practice of his profession. In 1857 he married, at Smyrna, Asia Minor, Caroline, daughter of the late Judge Thomas S. Bell, of West Chester, Pa., who survives him. In 1861 he returned to America on account of the unsettled condition of political affairs in Turkey, and locating in West Chester, there commenced practising medicine in this country.

In 1865, on his appointment as Physician-in-Charge of the Preston Retreat, at Twentieth and Hamilton Streets, he came to reside permanently in Philadelphia, and continued to hold this appointment until his health began to fail.

Soon after coming to Philadelphia he restricted his practice to obstetrics and diseases of women, on the subject of which he was a prolific contributor to this and other medical journals, and was also the author of "Lessons in Gynecology."

In 1870 he was appointed Lecturer on Obstetrics and Diseases of Women at the University of Pennsylvania, and in 1874 Clinical Professor of the University in the Diseases of Women and Children. He was also Honorary Professor of Gynecology of the University, a member of the American Medical Association, and the Gynecological Society; also of the State and county medical associations. He was a Fellow of the College of Physicians, and a member for many years of the American Philosophical and American Pathological Societies, and a correspondent of the Boston Gynecological Society, of the London Obstetrical Society, and of the Imperial Medical Society of Constantinople.

Reviews and Notices of Books.

A Practical Treatise on Orthopedic Surgery. By James K. Young, M.D. Philadelphia: Lea Brothers & Co. 1894.

In his preface, the author states that he has endeavored to provide students and practitioners with a guide to Orthopedic Surgery in accordance with the most approved knowledge of the present day. A noticeable feature of the work is the absence of long descriptions of operative measures for the relief of deformities congenital or acquired, or the result of inflammatory joint or spinal disease. The author wisely emphasizes the mechanical treatment of the various conditions, leaving an extensive description of operative measures to works on general surgery, in whose province they rightly belong. He devotes considerable space to the pathology of the different affections considered, and has brought this part of the work up to the most recent views. Want of space renders a detailed criticism impossible, but the author has given a fair and complete résumé of the different ideas in vogue at present regarding the etiology, pathology, symptoms, and treatment of the different conditions now assigned to the specialist in orthopedic surgery.

The work is a beautiful example of typographical art, and is abundantly illustrated. Dr. Young's work gives evidence of careful and conscientious research, and is a valuable addition to the literature of orthopedic surgery.

La Lèpre. Observations et Expériences Personnelles. Par le Docteur Jules Goldshmidt. Paris: Société d'Éditions Scientifiques. 1894.

What makes this little brochure so attractive that one is not apt to lay it down until the fifty pages have been carefully read, and the ten full-page phototype illustrations studied, is the impression left upon every paragraph, we might almost say, that the author is giving not only his personal experience, but a personal experience which is worth giving.

Leprosy has prevailed in the island of Madeira almost since its discovery, or for some four centuries. During the past twenty-six years of this time the author has lived there, and has made the most of his time and advantages for studying the disease in its many bearings, if we can judge by the result before us.

Clinical Medicine. A Manual for the Use of Students and Junior Practitioners. By Judson S. Bury, M.D. Lond., F.R.C.P. London: Charles Griffin & Company, Limited. Philadelphia: J. B. Lippincott Company. 1894.

This book comprises twelve chapters, covering all the more recent methods of diagnosis. It is quite novel to find the vast changes in books of this kind within the last few years. The skin, cutaneous eruptions, diseases of the nails, are certainly interesting. The examination of the blood is certainly as useful to-day as an aid to diagnosis as any other special symptom. The chapters on the chemical and microscopical examination of the urine have been most carefully prepared; so, for example, Esbach's method of estimating albumin shows it to be up to date. This book reminds us very much of that most admirable book by Seifert Miller, published in Germany. The illustrations are excellent, and the book is not only admirably adapted for the position of manual, but may even claim to be exactly what every physician should know to-day. It contains 468 pages, and is neatly printed.

Diseases of the Nose and Throat. By F. De Havilland Hall, M.D., F.R.C.P. Lond. With 2 Colored Plates and 59 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

This book is divided into three parts. Part I. treats of diseases of the nose, accessory sinuses, and naso-pharynx. Part II. treats of diseases of the pharynx. Part III. treats of diseases of the larynx. It has been written from a medical rather than a complete surgical standpoint. It fulfils its purpose, for it is written plainly and gives all that the ordinary practitioner requires for immediate reference. The book is profusely illustrated, and is well worth reading.

Some chapters, especially those on the specific infectious diseases affecting the throat, *e.g.*, scarlatina and diphtheria, although very carefully written, still show that all modern therapeutics has not been included. So, for example, antitoxine is not even mentioned as a therapeutic measure in 1894, although it has been extolled since 1891. However, the book merits the confidence of the profession.

The Senile Heart. Its Symptoms, Sequelæ, and Treatment. By George William Balfour, M.D. St. Andrews, LL.D. Edin., F.R.C.P.Eng., F.R.S. Eng. Consulting Physician to the Royal Infirmary, to the Royal Hospital for Sick Children, and to the Royal Public Dispensary, Edinburgh; Consulting Physician to Leith Hospital; formerly Physician to Chalmers Hospital, Edinburgh, etc.; Member of the University Court of St. Andrews. New York and London: Macmillan & Co. 1894.

This is a very clearly expressed and readable treatise upon a subject of great interest and importance, which has perhaps hitherto not received the careful study it deserves. We are gradually learning that old age is not the hopeless and helpless condition that some used to regard it, but that it is just as deserving of study as is any other period of man's life, and the rewards of its study are as great or greater. We cannot cure old age any more than we can cure infancy, but we can often, by our art, change what would otherwise be a period of torment and suffering into one of peaceful content. To this end is the teaching of Dr. Balfour's book, and no one can arise from a perusal of it without feeling that he is in better position than before to assuage the distressing ills to which some of our dear aged ones may be subject. We can heartily commend the work as a valuable contribution to the literature of old age.

The Students' Dictionary of Medicine and the Allied Sciences. Comprising the Pronunciation, Derivation, and Full Explanation of Medical Terms, together with Much Collateral Descriptive Matter, Numerous Tables, etc. By Alexander Duane, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. Philadelphia: Lea Brothers & Co. 1893.

The rapid growth of medical terminology, especially in the departments of bacteriology, pharmacology, and therapeutics, makes the possession of a reliable technical dictionary an absolute necessity for student and practitioner alike. Dr. Alexander Duane, who is well known as a medical writer of wide experience, and who has had special training as the reviser of medical terms for Webster's International Dictionary, has issued such a work, which proves to be a model of conciseness, convenience, and thoroughness. Obsolete words have been discarded, and the book is brought accurately to date by extended research among current medical journals and recent monographs. The definitions of diseases include a brief synopsis of their etiology, symptoms, and treatment; the anatomical and physiological terms are accompanied by outlines of the essential features of structure and function, and each drug is described, with its reputed action, therapeutic uses, and pharmacopœial preparations.

Although contained within the limits of a handy volume of 650 pages, many of the definitions possess encyclopædic value. Useful anatomical and other data are tabulated with originality and precision. Under the word Artery, for example, is found a table covering eight pages, presenting the origin, lateral and terminal branches,

and their distribution, of each vessel. Twenty tabular pages are allotted to the origin, direction, and insertion of the muscles, with their action and nerve-supply; while thirty-two more are given to the "Table of Bacteria and Fungi," with their origin, morphological characters, proper temperature for culture, properties, etc., as well as a complete list of all bacteriological diseases. The latter is the most comprehensive and serviceable table of the kind yet issued. The system of pronunciation is simple, and the spelling is in accordance with the best usage rather than analogy. Derivations from foreign tongues are given, those from the Greek being in English text for the benefit of readers unfamiliar with the original. The typography and arrangement of the book are highly commendable.

The author is to be congratulated upon the production of a work combining such practical utility with a fund of most extensive research.

1. Directions for Laboratory Work in Bacteriology, etc. By Frederick S. Novy, Sc.D., M.D.; Junior Professor of Hygiene and Physiological Chemistry. Pp. 309. Ann Arbor, Mich.: George Wahr.

2. Laboratory Manual of Elementary Physiology and Urine Analysis. By John H. Long, M.D., Sc.D., Professor of Chemistry, etc., Northwestern University. With numerous illustrations. Pp. 366. Chicago: E. H. Colegrove & Co.

If there be "no royal road to learning," the seeker after medical knowledge to-day at least may choose a princely road. The books, whose title-pages are given above, illustrate that the American medical teacher is rapidly approaching perfection in method and style. Both books present the subject-matter in a clear, comprehensible manner, guiding the student gradually and pleasantly through the intricacies of the primary work, which are usually so discouraging. Neither work claims originality, the authors in both instances frankly stating that they have drawn from the best sources, and arranged the matter for their purposes. The paper and type are good; those of the first book excellent.

1. Professor Novy's work opens with clear directions for preparation of nutrient gelatin, potato culture, describing the microscope and method of examination of bacteria, hanging drops, staining of bacteria, examination of colonies. A description of various bacteria follows, giving their origin, form, motility, sporulation, growth, oxygen requirements, temperature, behavior to gelatin, aërogenesis, and pathogenesis.

The bacteriological examination of water, soil, and air is briefly described. Pathogenic bacteria, methods of infection, post-mortem examinations, sputum examinations, and agar plate cultures, are followed by a full and mostly clear exposition of the technique of direct microscopical examination of streak preparations made from organs and tissues of infected animals. Methods of testing disinfectants occupy the closing pages of the book. The plan of interleaving the latter with blank pages for drawings which the student is expected to make, is to be commended.

2. Professor Long's little book is an outgrowth of the course given to the second-year students. He claims that two years should be given to this subject in all medical colleges. This is really done in some of the New York and other colleges.

The first portion of the book is devoted to simple experiments in elementary chemical physiology, describing and illustrating the apparatus and technique, chapters on carbohydrates, fats, proteids, the blood, bone constituents, saliva, gastric juice, bile; on milk, beef extracts, flour, water, and air, briefly enter into tests and general experimental studies.

The second part deals with urinary analysis. This is especially valuable to the medical practitioner, inasmuch as it is the most recent exposition of the subject, and contains a valuable appendix of test-solutions and tables.

A System of Genito-urinary Diseases, Syphilology, and Dermatology. By Various Authors. Edited by Prince A. Morrow, A.M., M.D., Clinical Professor of Genito-urinary Diseases; formerly Lecturer on Dermatology in the University of the City of New York; Surgeon to Charity Hospital, etc. With illustrations. Vol. III., Dermatology. New York: D. Appleton & Co. 1894.

The third and last volume of this composite product of American work in the field of Dermatology and Syphilology, surpasses in some respects the preceding volumes, which have already received favorable notice in these columns. The list of contributors includes most of the familiar names in matters dermatological, extending alphabetically from Allen to Zeisler, and geographically included within a line drawn from Montreal to New Orleans by the way of Chicago.

If the work consisted in a series of monographs by these authors, written by them to parade each his own pet hobby, it would perhaps make interesting reading for those specially engaged in treating skin diseases; but it would be of little real value to the physician at large. As it is, the editor has selected, with apparent excellent judgment, the man for each particular chapter who was best suited to give a clear, correct, and at times necessarily concise, account of all that is known upon the subject. In this way a practical treatise, for the most part comprehensive enough for a reference compendium, has been produced which most creditably reflects our present knowledge of skin diseases, and while a true exponent of American dermatology of to-day, does not in any way neglect those diseases peculiar to other parts of the world. As the editor tells us in his prefatorial remarks, some forty diseases have been here described which only a few years ago were not to be found in text-books as distinct clinical entities. Especial commendation is due the illustrations, which we must say are, as a rule, decidedly superior to those of the other volumes. There are twenty-seven colored plates, twenty-five half-tones, and over a hundred figures in the text. Some of the new process pictures are very life-like. The editorial work and Dr. Morrow's own article on Leprosy, deserve praise. The publishers have left little to be desired, but we think they might have put on a better binding. We predict for the work a large sale on its merits.

The Horse. Its Varieties and Management in Health and Disease. Revised and enlarged by George Armatage, M.R.C.V.S.; formerly lecturer in the Albert and Glasgow Veterinary Colleges; Author of "The Horse Doctor," "The Cattle Doctor," etc. London and New York: Frederick Warne & Co 1893.

This little work is written in a simple style and contains, aside from the descriptions of disease and therapeutic advice, a rather full chapter on horse-management, hints on purchasing, shoeing, breeding, breaking, etc. Such a large proportion of medical men are of necessity horse owners, that a work devoted to their faithful friends cannot fail to interest.

The book before us will not be found sufficiently scientific for the physician who knows anything at all of the subject, and he will feel, in reading a considerable part of the instructions, that they were written for Englishmen. Still an occasional hint of value can be picked up.

Text-book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber, Graduate of Bellevue Training School; Assistant Superintendent of New York City Training School, etc. Pp. 268. New York: Macmillan & Co. 1894.

The author informs us that the scheme of this book has been practically worked out in class teaching. She correctly surmises that she has devoted too much space to minute structural anatomy, which courses he defends by her experience in teaching. She claims that nurses

thus taught would be led step by step to a correct grasp of the subject, and would thus be trained to think. We apprehend, however, that the average nurse will fail to reach the author's ideal. Her style clearly indicates that she has well measured the capacity and demands of those for whom it is intended. The mechanical execution of the book is creditable to the publishers.

Transactions of the Medical Society of the State of New York for the Year 1894. Published by the Society. 1894.

Among the most interesting of the contents of this volume of transactions are the discussions—abnormal surgery, diphtheria, and menstruation. There are also a number of single papers that are well worthy of preservation in permanent form.

Clinical Department.

THE USE OF ANTITOXIN IN DIPHTHERIA FOLLOWING SCARLET FEVER.

By W. S. GLEASON, M.D.,

NEWBURGH, N. Y.

At this time, when, as a profession, we are awaiting with interest the effect of the use of antitoxin upon the human subject, I feel that the following results should not go unrecorded:

On the morning of October 5th I was called to see John ——, aged eight, a robust boy, son of vigorous parents. I found upon examination well-marked evidences of scarlet fever; temperature, 104° F.; pulse, 140; upon my evening call, temperature, 105° F.; pulse, 144. The temperature, unless reduced by antipyretics, ranged between 104° and 105° F., with but slight variation between the morning and evening observation.

On the second day of the disease a fibrinous exudate made its appearance on both tonsils and pharynx, with intense tonsillar enlargement, and in spite of thorough pharyngeal disinfection there was great difficulty in swallowing. Gradually the appearance of the exudate changed its appearance, and upon the seventh day from the time of my first call I felt that I had a true diphtheria engrafted upon the scarlatina angina. Starr brings out the fact in his "American Text-book of Diseases of Children." As we have not the means to make cultures in our city, I was not able to verify the presence of the Klebs Loeffler bacilli. The temperature, if unrestricted, remained at 104⅘° F.; pulse, 150; glands of the neck enlarged, and an excoriating nasal discharge was present.

At three o'clock in the afternoon of October 12th I made my first injection of Aronson's serum, using twenty minims, followed by a second injection of forty minims in six hours. With close observation I could not appreciate the least reaction as an immediate result of the injection. Twenty-four hours from the last injection the temperature dropped to 99° F., with a corresponding amelioration of the symptoms. There was an evening rise of temperature to 103° F., but from that time, October 12th, to this date, October 23d, the patient has steadily convalesced, with no decided fluctuation of pulse or temperature. I combatted the scarlatinal conditions with carbolized inunctions to the body, lime-water, and peroxide of hydrogen sprays for throat; and a judicious use of quinine and phenacetine as antipyretics. The diphtheritic manifestations were met with the same spray for throat, and bichloride irrigations, 1 to 1,000, for both throat and nares. Internally, full doses of mecuric bichloride. For forty-eight hours preceding the use of the serum, the heart flagged and required careful stimulation. The fact that within twenty-four hours after the use of the serum such a remarkable change took place proved to me conclusively that the absorption of septic material ceased at once, and produced a reaction not found in such intense conditions.

EXTRA-UTERINE PREGNANCY.

By WILLARD McCHESNEY, M.D.,

JANESVILLE, WIS.

In the following case of extra-uterine pregnancy with retained fœtus, no reference will be made to the literature on the subject, as the investigator can readily refer to it. The case appended presents points sufficiently interesting to merit its publication.

Mrs. Eugene B——, aged forty-two, a resident of Texas, became pregnant, or at least so pronounced by her family physician, in the early spring, 1889. The usual symptoms present in such cases were not lacking,—there was cessation of menstruation, nausea, tenderness of the breasts, enlargement of the abdomen, motion, etc. The husband, from whom the history was obtained, did not know whether fœtal heart sounds had been demonstrated. Mrs. B—— says abdomen continued increasing in size until she had passed the full period of gestation. At the expiration of her period labor did not come on, and for two months following there was a period of complete quiescence. At the commencement of the eleventh month she had pains, quite severe, and the pains were accompanied by a discharge from the genitals of a serosanguinolent character. The pain and discharge continued for nearly three months and gradually ceased. During this time the abdominal enlargement decreased in size, and at the end of the fourteenth month nothing remained but a firm tumor occupying the right iliac fossa. At about this time menstruation was re-established and the patient considered herself in fair health, as there was no inconvenience from the tumor. Shortly after this a consultation was held to decide whether an attempt should be made to remove the tumor by operation. The husband is not clear as to the conclusions arrived at at this time, but the consulting surgeon advised no operative interference. Mrs. B—— informed me that the tumor changed in size, but in view of what was subsequently determined, thinks she was in error.

From dates given above until March, 1894, the health of patient was very good, but during the early days of March she was taken with quite a severe chill, followed by fever; in a few days she had chills coming on irregularly, associated with fever, diarrhœa, and quite severe sweats. There was also some muscular pain somewhat resembling the pain of muscular rheumatism. There was a rapid waste of tissue and strength, and the services of a rectal specialist were called into requisition for the purpose of relieving the patient of a very bad case of hæmorrhoids, the operation to be done without the use of knife, cautery, or ligature (parenthetically, we have no hesitation in saying that they were not used). Regardless of the rectal operation, emaciation was rapidly progressive, diarrhœa continued, and was held in check only slightly by opiates administered by rectal injections and by mouth, and a northern trip was advised, trusting that the change might be beneficial. The trip north was uneventful, and the patient did not suffer materially from the effects of her journey. Shortly after her arrival, however, she became considerably prostrated, and Dr. Q. O. Sutherland, of Janesville, who was called in to see the case, diagnosed it as one of extra-uterine pregnancy, and advised immediate removal to his private hospital, hoping to get her in condition to undergo an operation. A strong effort to build her up proved of no avail, and she died quite suddenly September 20th.

Mr. B—— kindly permitted an autopsy, which was held the following morning. On opening the abdomen the bowels were found to be singularly free from adhesions, and it was at once seen that the right Fallopian tube was the seat of the difficulty. On its posterior surface the tube was adherent throughout to the pelvic peritoneum and the bowel; the anterior surface was free from adhesions. On opening into the tube we found the badly decomposed remains of a fœtus, showing a growth of about seven months. After thoroughly cleansing the foul-smelling cavity, it was found that a free opening existed

between the fœtal sac and bowel, and that the tissues in the vicinity of the bowel were necrotic. It was evident that an operation, to be successful, should have been performed several months previously.

In reviewing the case several points present themselves for our consideration. The principal one to consider is, naturally, the one which questions the ability to have made an early diagnosis. In looking over the case as it presented itself at the hospital, and reviewing its history, it seems hardly possible to have erred in making a diagnosis.

1. We have a clear history of pregnancy in so far as that fact could be determined, and it might have been possible to have detected the fœtal heart-sound, a positive sign.

2. Pains occurring at the eleventh month, with a discharge, decrease in size of the abdomen, and a firm tumor left.

3. The very evident signs of septic infection which first appeared about March 1st, with the previous history, should have been a prominent factor in establishing the diagnosis of extra-uterine pregnancy and decomposition of fœtal remains.

In conclusion, the chances were strongly in favor of recovery had a diagnosis been made sufficiently early to allow an operation, either by laparotomy, or, as suggested by Dr. Sutherland, opening directly into the sac from the vaginal vault, and if cavity was septic, treating it as an ordinary abscess cavity.

LEAD-POISONING AND THE MORPHINE HABIT—REPORT OF A CASE.

By R. ABRAHAMS, M.D.,

VISITING PHYSICIAN TO MOUNT SINAI HOSPITAL, OUTDOOR DEPARTMENT.

Besides the unusual mode of acquiring the morphine habit, and the strange association with it, that of profound lead-intoxication, the history of the case that I am to report contains an additional item which may well interest the physician, his inevitable ally, the druggist, and possibly the public, if it reached their ear.

I presume it is the experience of almost every practitioner to find, at one time or another, his prescriptions repeatedly renewed without his advice or consent, written or oral—whether the prescription orders morphine or rhubarb, cautious use or ordinary care. My object, however, is not to discuss the abnormal relation between the physician and apothecary that such a practice involves, but rather to point out the serious trouble that it may lead to, and there is not a better illustrative case than the following one.

Mrs. K——, aged forty, mother of ten children, the last one still-born, has been in poor health for the last few years; pale, emaciated, and complaining of neuralgic pains at different points of the body; appetite very poor; never felt hungry for meals; bowels moved very irregularly, and colicky pains in the abdomen were of frequent occurrence. On a Friday in the month of July, the day being moderately warm, she was suddenly seized with severe cramps in the abdomen and the legs, incessant vomiting and diarrhœa. Physicians were hastily summoned, a diagnosis of cholera morbus agreed upon, and treatment accordingly instituted. The next morning, as there was no improvement in the patient's condition, I was asked to see her, and the following is what I found: Vomiting and diarrhœa every half-hour; both dejecta were copious, one green, and the other blackish and malodorous; the extremities cold; the face extremely pale, pinched, drawn in, and covered with a cold, clammy perspiration. The abdomen was hard and retracted, very tender around the umbilicus. The tongue was thickly coated and moist; the breath peculiarly offensive. The pulse, much to my surprise, was full and regular, and the rectal temperature a small fraction above the normal. The patient continually moved her hand toward the abdomen. Now, this condition of apparent collapse, with a good pulse and a normal temperature, were, in my mind, hardly compatible with an attack of cholera morbus. The clinical picture rather suggested some form of profound intoxication, which I at once set about to find out. On a second examination of the patient I discovered, much to my satisfaction, a blue line along the gums.

This was a key that unlocked the mystery, and although the source of the lead supply was unknown, the diagnosis, however, was tolerably certain. Later in the day, the patient's husband volunteered the following information: Eight years ago his wife was troubled with hæmorrhoids, for which the physician in attendance prescribed "something." His wife got well, but the curative agent pleased her so much that she continued to take it to that day. He was totally ignorant of the contents of the "box," but he was positive that a failure to supply her with it rendered her unspeakably wretched. By and by, exercising her womanly prudence, she laid aside a good stock of her favorite drug for a rainy day, as it were. She never experienced any difficulty in obtaining it, for she had a copy of her original prescription in about half a dozen shops, where she could get it on the presentation of the old label. In the course of time she became subject to frequent attacks of colic, which, however, always yielded to an extra dose of her medicine.

While narrating this unvarnished tale, he called my attention to a supply of "pain-killers" under her pillow, to which she liberally helped herself during the present illness, but with very little benefit. Now, this favorite panacea was in the shape of a suppository, which, on inquiry, I found to contain a third of a grain of morphine and one-half a grain of acetate of lead. This piece of etiological enlightenment left no doubt as to the real nature of her condition. It is hard to estimate the quantity of lead the patient consumed during the eight years; for, at times, she told me her colic was so acute and the desire for relief so intense that she filled her rectum with suppositories to its utmost capacity, while in the absence of pain she took the suppositories simply to supply her craving for the alkaloid, as the habit was perfectly established. Thus one drug spurred her on to take the other. The poor victim knew that she could not be without the suppository; yet her ignorance of its composition was only exceeded by her passion for it.

The moral and interest of this peculiar case will be enhanced by one more, rather amusing, feature of it. My patient was regarded by many a neighboring woman with pious admiration. Many a pain she relieved, and for all I know, many a woman, through her agency, is now suffering from the effects of lead-poisoning and the morphine habit.

From a pathological standpoint, this case strikes me as being a unique one, for, excepting the anæmia, the emaciation, the colic, the alternate constipation and diarrhœa, the neuralgic pains, and the "lead line," while sufficient to establish a diagnosis of lead-poisoning, none however of the great and marked nervous symptoms were present. In a case of such long standing, one would naturally expect to see some form of paralysis. Although the arterial system showed commencing atheroma and the urine contained slight evidences of renal disturbance, yet the nervous system showed nothing to indicate any lesion whatever.

Whatever form of plumbism this case may be regarded, its chief interest, perhaps, lies in its combined features, and their mode of acquirement.

158 Clinton Street, New York City.

Bogus Degrees in England.—The trade in degrees from non-existent American universities has recently revived in England. These degrees give no rights, but their purchasers have the satisfaction of adding a few more letters after their names. The price charged for an M.D. or LL.D. is £30, and for any other degree wished for, £25.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, October 25, 1894.

MALCOLM MCLEAN, M.D., CHAIRMAN.

Tubal Pregnancy—Rupture, Operation, Death.—DR. CHARLES E. NAMMACK presented a specimen of tubal pregnancy in which rupture had taken place about the forty-third day; slight symptoms of collapse, pain, and hemorrhage manifested themselves; he advised an operation. Three consulting surgeons objected, believing that the hemorrhage was limited by the folds of the broad ligament, but the next morning the patient went into collapse from recurrence of concealed hemorrhage, and then no difference of opinion existed with regard to the propriety of operating. It was too late, however, for the patient did not fully rally, and died fifty-two hours after removal of the blood-clots and ovum per laparotomy. Dr. Nammack said his object in presenting the specimen was to impress the danger of letting extra-tubal pregnancy continue, especially after the first signs of rupture, on the supposition that the pregnancy was extra-peritoneal and that the hemorrhage would be limited. In the many cases operated upon by Dr. Joseph Price not one had been encountered in which the pregnancy was extra-peritoneal. Yet it was the custom of general practitioners, he believed, to rely upon their ability to say whether the hemorrhage was extra peritoneal or intra-peritoneal; if the former, to wait, and in waiting take the great risks of recurrent hemorrhage, peritonitis, septicæmia, and subsequent trouble from a damaged tube.

DR. BOLDT named one justification for temporarily postponing the operation, namely, shock attending the rupture.

DR. J. R. GOFFE thought Dr. Nammack need not go outside of New York to get confirmation of the view that a prompt operation was demanded in cases of ectopic gestation. The most prominent gynecologists in this city had advocated and practised prompt interference for years, among them being Dr. Janvrin, who had taken this position as many as ten years ago.

Point of Origin of an Ovarian Tumor.—Dr. J. R. Goffe presented the sac of an ovarian cyst, on one side of which, for a distance of eight or nine inches, the fimbriated extremity of the Fallopian tube could be seen spread out like a veil. Evidently the small cyst which was the commencement of the tumor had lain directly under the fimbriated extremity of the tube. Part of the other ovary had also undergone cystic degeneration; two-thirds of it were removed; the edges were turned in so that no raw surface would be exposed to form adhesions. The patient was doing well.

Sarcomatous Degeneration of Uterine Fibroids.—Dr. Goffe also presented a uterus with multiple sub-peritoneal fibroids and sarcoma. This and two other cases seen by him recently showed the importance of operating early for uterine fibroids causing symptoms if one would spare the patient malignant disease.

The Chairman, DR. MCLEAN, said he had removed an ovarian tumor weighing over forty pounds, three or four years ago, and finding the fimbriated extremity of the tube spread largely over it, he dissected it off and dropped it back with the rest of the tube. Two years later he had occasion to reopen the abdomen of this patient for another disease, and it was interesting to note that the tube was healthy and had diminished to its normal size.

New Pelvimeter.—DR. HERMAN L. COLLYER presented a new pelvimeter, the blades of which could be taken apart and placed parallel with each other when not in use; which registered in both the English and metric systems; which would give pelvic diameters up to fourteen inches, and which cost but two dollars, or a third to a fifth as much as any other instrument in the market. Cheapness was extremely important in an instrument which every general practitioner should keep, and yet one which he was not likely to use more than a few times during a life practice.

DR. MARX mentioned a case in which the calipers presented by Dr. Collyer measured the external diameters of a very large pelvis, which others at his command had failed to do.

Fœtal Abnormality.—DR. E. A. TUCKER exhibited photographs of a child with a left foot and leg connected apparently by osseous as well as fleshy union with the upper dorsal spine. The foot was perfectly formed, and one could make out what seemed to be leg, knee, and thigh. It was sensitive to touch.

The mother, Irish, twenty-eight years old, addicted to drink, mother of three other children which were born normally, was brought to the hospital for pain in the left side caused by a kick from her husband. The os was somewhat dilated, but real labor did not come on until six days later. The woman was very positive that the abnormality was due to the kick by the husband's left foot, and was in the nature of a punishment for the act. Of course, Dr. Tucker said this notion was absurd, since such a growth must have started long before six days prior to full term, and doubtless had its origin in a blasted ovule which became attached to this fœtus.

When during the labor Dr. Tucker felt the foot between the shoulders, he remarked to those present that there probably would be dislocation of the leg, and was much surprised later when two other feet dropped out. Had the case been a breech presentation, this foot might have caught and caused trouble; or if a shoulder had presented first, there would have been great difficulty in making full diagnosis.

When the waters broke, a small, irregular, soft, whitish mass came away, which Dr. Tucker thought at first was vernix, but on section was found to contain two cysts, and was composed of cells, but the exact nature of the structure was a mystery to Dr. Prudden, Dr. Freeborn, and others who had examined it. There was a small, scar-like protuberance on the heel of the third foot, and the mass was believed to have been attached there.

Extirpation of the Uterus and Adnexa in Pelvic Suppuration and Post-Puerperal Septicæmia.—DR. H. J. BOLDT read a paper with this title. Pelvic suppuration might leave multiple abscesses, it might leave double pyosalpinx, it might leave a mass of inflammatory material enclosing pus—a variety of conditions in which successful treatment often involved operative interference of grave nature. In quite a considerable percentage of the cases in which the uterine appendages had been removed trouble had still persisted, due to the fact that the uterus, the origin of the primary, or seat of the secondary, trouble, had been allowed to remain. The author was led to ask the question, is the uterus of utility to a person with bilateral disease of the tubes and ovaries to such degree that they have to be removed? The answer, he said, must be in the negative. Some operators who entertained this view made it the excuse for always removing the uterus when they opened the abdomen and found double tubo-ovarian disease. But Dr. Boldt had opposed such a course for the reason that often disease in the uterus could be corrected, that abdominal hysterectomy complicated removal of the appendages, and that if it should finally prove necessary to remove the uterus, it could be more safely done through the vagina, and would be unattended by risk of hernia, which was considerable in all abdominal operations. In comparing vaginal with supra-vaginal hysterectomy, the author claimed that the former was not attended by greater risk of subsequent intestinal obstruction, that there was greater traumatism and consequent shock from handling the intestines in the abdominal method, also much greater liability to spread infection, and, as said before, liability to ventral hernia in spite of all precautions.

The author, being an advocate of conservative surgery, advised the abdominal route wherever there was a possibility of being able to save the whole or a part of an ovary. But where it was possible to make a positive diagnosis, which called for removal of the uterus as well as of the adnexa, he advocated the vaginal method, and claimed that by it one could reach the uterus, the appendages, and other diseased structures. An important advantage of the vaginal route was that it gave natural drainage (by gravity), and also that it enabled the patient to return home in a much shorter time. In suppurative cases clamps had usually to be employed instead of sutures, but they could be removed in twenty-four hours, and during that time favored drainage.

Regarding the mortality of the vaginal operation, Dr. Boldt had lost one patient (almost a hopeless case to begin with) out of seven operated upon; 542 in literature gave a mortality of 4 32 per cent., at least 295 of them having been suppurative. He had serious doubts whether one could collect 500 cases of abdominal hysterectomy with a smaller mortality than seven per cent.

In acute general puerperal septicæmia he had washed out the abdomen in four cases, and they died, had removed the uterus in four, and they, too, had died, yet he regarded it as more logical to hope for a favorable termination from vaginal hysterectomy and removal of the tubes than from removal of the tubes alone where the uterus was the original site of infection.

Dr. Von Ramdohr thought that in cases of multiple pelvic abscess in which it had been determined to remove the uterus, the abdominal route should be selected, since some of the foci of infection might escape notice through the vagina. In puerperal cases, also, it was necessary to open the abdomen in order to find all collections of pus.

Dr. Grandin said that if the paper was intended as a plea for removal of septic appendages, he agreed with the writer; but if it was intended as a plea for removal of such appendages through the vagina rather than through the abdomen, he disagreed with him. He believed in seeing as well as feeling what one was about, and it was for this reason that he was opposed to returning to the old method of treating these cases through the vagina, even with the addition of removing the uterus. Extirpation of the cancerous uterus through the vagina might be simple in the hands of an expert, but vaginal hysterectomy in disease of the appendages, with all the possible complications, such as adhesion to the vermiform appendix, etc., might be anything but simple. The danger of hernia in abdominal operations was greatest where up-drainage was practised, but such drainage had been abandoned in favor of passing gauze down through the vagina.

In acute general puerperal peritonitis he had not found the infection limited to the uterus, and consequently it would not have been sufficient only to remove that organ either by the vaginal or abdominal method. There were multiple abscesses scattered throughout the abdomen, and it was by opening these, washing out, and draining under the liver, under the spleen—in other words, resorting to multiple drainage and cleansing, that a Western physician had succeeded in saving one patient.

Dr. Goffe had had under observation six or seven cases operated upon by the method advocated by Dr. Boldt—the Belgian method—and the impression which he had received was that it was a very blind, a very bloody, and unattractive procedure. The abdominal operation was clearer; it enabled one to see what he was doing and should do, and left the way open for either conservative or radical operation, according to the more exact diagnosis made possible by touch and sight.

Dr. W. E. Porter could not agree with the author, particularly in septic disease of the appendages, believing that, in the very cases in which the vaginal method had been advocated, there were the strongest contraindications to its employment. In tubal disease it was impossible, owing to the frequency of extensive adhesions and complications, to make an exact diagnosis and operate with safety without abdominal section. In puerperal cases the simplest operation, one least attended by shock, would give the best results.

Dr. Robert H. Wylie found it difficult to discuss the paper because, he said, it dealt with so many other subjects than those indicated in the title. So far as the mortality rate was concerned in the list of cases of vaginal hysterectomy given by Dr. Boldt, the result had been excellent, but it was not yet possible to speak positively of the remote results, particularly of the occurrence of hernia. It was a long time before we learned of the frequency of ventral hernia following laparotomy, for operators were too much concerned with other points to pay much heed to this accident. Might it not be so with regard to hernia into the vagina following vaginal hysterectomy? In puerperal septicæmia he could not see how the author could distinguish between cases in which the infection was limited to the uterus, and justified removal of that organ through the vagina and cases in which it had passed to the peritoneum, which it might do directly instead of through the tubes. He would, therefore, open the abdomen and then decide what should be done.

Dr. Boldt made some closing remarks. He thought it strange the gentlemen should advocate the abdominal operation when the vaginal had given so much better results, that is, in the cases in which alone he had advocated it.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Annual Meeting, October 22, 1894.

Seneca D. Powell, M.D., President, in the Chair.

Officers.—Many of the candidates having withdrawn, there remained but two for president, two for first vice-president, eight for censors (five to be elected), and but one candidate for the other offices. Dr. Egbert H. Grandin was elected *President;* Dr. Richard Van Santvoord, *First Vice-President;* Dr. S. Henry Dessau, *Second Vice-President;* Dr. Charles H. Avery, *Secretary;* Dr. William E. Bullard, *Assistant Secretary;* Dr. John S. Warren, *Treasurer;* Drs. Seneca D. Powell, Charles L. Gibson, George T. Jackson, Edward D. Fisher, and Charles H. Knight, *Censors.*

Report of the Treasurer.—Dr. Warren read his report as treasurer, and it was found correct by the auditing committee. The receipts for the year had been $4,152; adding balance from last year and subtracting disbursements for this year, which amounted to $4,441, left a balance of $2,392.

Report of Committee on Hygiene.—Dr. W. A. Ewing, chairman of the committee, read the report. They had found that some of the dispensaries had acted on their advice and separated children with contagious diseases immediately on entering the dispensary, not allowing them to mix with others in the general waiting-room. Some of the larger dispensaries, however, had not yet adopted this most important regulation for the prevention of spread of disease.

The work of the Board of Health with regard to vaccination and report of contagious diseases among school children, and the management of diphtheria, was commended. Some of the dangers of spreading tuberculosis were mentioned, and it was suggested that in the lower tenements it would be much safer to do away with carpets than to leave them on the floor as dirty as they commonly were.

The Communion Cup, the Court Bible, and Syphilis.—The committee was pleased to report that some churches were dispensing with the single communion cup and were using one for each communicant, thereby avoiding one way of spreading syphilis. In this connection attention was also called to the danger of communicating syphilis by kissing the court Bible, and it was suggested that if this custom were continued the book ought to be covered with a thick layer of iodoform gauze.

The Disposal of Garbage.—The habit of the authorities of allowing ash-cans to stand until overflowing, and then of filling carts beyond their capacity and scattering the ashes and garbage in the streets, was condemned, and the recommendation was made to burn the garbage.

Report of Committee on Ethics.—Dr. W. M. Polk, chairman of the committee, made a verbal report, stating that few complaints had been brought before the committee and these had been settled by the delinquents making prompt amends. Regarding complaints against members for using the daily press in some form for advertising, the committee suggested that they be brought before the Society itself, with the hope that the greater publicity given the matter might have some restraining influence on delinquents of this character.

Dr. Joseph D. Bryant, chairman of the Committee on Prize Essays, stated that no essay had been received.

On Symphyseotomy, with Report of a New Case.—Dr. H. J. Garrigues read the paper. (See p. 577.)

Dr. Egbert H. Grandin was requested to open the discussion. Prior to the rejuvenation of symphyseotomy in 1890 he was exceedingly sceptical. But personal experience with it in two cases in which he had operated, and in three others in which he had assisted, had since proven to him that it was a distinct advance in the obstetric art. He did not believe the profession yet fully realized what symphysetomy meant. It meant that we were no longer called upon to take life in order to save life; to sacrifice the child by embryotomy in order to save the mother.

Too few operations had been done in this country to enable anyone to speak dogmatically upon the position which symphyseotomy was destined to take, for we must judge by what can be accomplished in America, not by what has been done in Europe. He believed, however, that the time was approaching when the general practitioner would have a practical knowledge of pelvimetry and of aseptic surgery, and that then many children would be saved by elective symphyseotomy. If the operation were done aseptically, before the woman and child had become exhausted, there should be no mortality for the mother, and he thought also none for the child.

Dr. H. C. Coe had peformed symphyseotomy three times, twice within the past six weeks, but did not feel quite so enthusiastic about it as the last speaker. Further experience was necessary to enable one to pass an intelligent or final opinion upon it. He had noticed a good deal of difficulty in extracting the head, and there had not been as much gain in the pelvic diameters as he had hoped there would be. With the conjugate under three inches he would perform Cæsarean section, but where it was between three inches and three and a half he thought symphyseotomy should be resorted to, provided the case were seen at the beginning of labor. All of his patients were seen early, pelvic contraction was recognized, everything was favorable, but such conditions were not likely to be present in cases seen in private practice. He had not yet made up his mind as to the best method of extracting the child. The cervix not having been fully dilated there was considerable delay of the head, and one child suffocated. It would seem, therefore, that the forceps might be indicated quite as often as version. Like Dr. Grandin, he expressed preference for the blunt-pointed bistoury over the Galviani knife. He did not believe in working in the dark, but would expose the full front of the symphysis and see what he was doing. The operation in this country was still *sub judice*.

Dr. Charles Jewett agreed with the author's conclusions on most points. Symphyseotomy, compared with Cæsarean section, labored under two disadvantages. The first was the difficulty of determining the size of the child's head and mother's pelvis, which it was not necessary to know in Cæsarean section; the second, related to the first, was the fact that if the pelvis were overestimated the operation would probably prove a failure. There was greater difficulty, too, in the after-care of a case of symphyseotomy than of Cæsarean section. In the former the bones had to be kept in apposition and the wound free from contamination with urine. He agreed with other speakers, that the operation was too recent in this country to justify sweeping statements. One who placed the lower limit of the conjugate diameter at three inches would probably find symphyseotomy a safe operation.

Dr. R. A. Murray thought symphyseotomy could be done safely in private houses as well as in hospitals, but we could not hope for the results which had been obtained abroad until, like there, it came to be performed by those who had had previous experience. He called attention to the increase in the oblique and transverse diameters as well as in the conjugate, which rendered the operation especially suitable for the generally contracted pelvis, which was the deformity oftenest found in this country. He also referred to the larger size of the newly born in this country, the average weight at the City Maternity Hospital being about seven pounds and a half, as against about six pounds in Italy. Of course the larger the child the larger must be the pelvis to justify symphyseotomy instead of Cæsarean section. Do not try to determine the size of the pelvis by one or two fingers; introduce the whole hand.

Dr. Garrigues made some closing remarks. Symphyseotomy had been recommended where the conjugate was only two inches and a fourth, but he thought three inches a safe lower limit in this country, and three and a half sufficiently high, for above that one should be able to extract by version or with forceps.

Correspondence.

APEX CATARRH OR TUBERCULOSIS.

To the Editor of the Medical Record.

Sir: In reply to the very kindly criticism of Dr. H. B. Moore, of Colorado Springs, concerning an article by myself in the issue of September 22d, allow me to call his attention to an article on "Apex Catarrh," in the issue of January 6, 1894. Also to a paper read by Dr. G. R. Butler, of Brooklyn, N. Y., before the Climatological Section of the Congress of American Physicians and Surgeons, in Washington, D. C., May 29, 1894. The title of this paper was "The Methods and Value of Exercise and Diet in the Prophylaxis of Pulmonary Phthisis." The name apex catarrh is said to be objectionable. The name is as unsatisfactory to me as to any one else. In the cases called apex catarrh all the mucous membranes of the body are more or less affected—the gastro-intestinal, as a rule, the most of all. It seems hardly wise to name the disease with reference to the localized bronchitis only. Thus far, however, no better name has been suggested. The term, "the pre-tubercular stage of tuberculosis," has been suggested. If all, or a large proportion of cases of apex catarrh, became tubercular, this term would exactly fill the requirements, but such is not the fact. The great majority of cases of apex catarrh recover within a few months, and only the exceptional case ever develops tuberculosis. On this account I have avoided any name calling attention to a possibility. While it is always possible that a given case may become a localized tuberculosis, most cases look back to their condition of depressed health as a time when they "were a little run down from overwork," "had a stomach trouble," etc.

The conditions of apex catarrh and tuberculosis run into each other. No one can decide when the tubercle bacilli gain a foothold in the tissues depressed in resistance and vitality by a catarrhal inflammation, and the case pass from a pre-tubercular into a tubercular condition. A decision can only be arrived at by watching the course of the disease. I early realized my inability to decide which case would take a bad course (become tubercular) and which one would recover within a few months. An apex catarrh does not arise from an acute

cold in the majority of cases. A small proportion of cases cannot well be explained on any other basis, and yet this question is one concerning which I have much to learn. A very large proportion of cases of apex catarrh present themselves to the physician when suffering from an acute cold, but careful inquiry generally elicits the fact that the patient did not feel well before taking the last cold.

As to the examination of the sputa in such cases. If the patient has no disease of the upper air-passages that occasions cough no sputa can be obtained. In the great majority of cases in which the sputa can be obtained no tubercle bacilli can be found. If they are present then the case is one of tuberculosis and transcends the limits of this discussion.

With the assistance of a competent bacteriologist I pursued this line of examinations for two years, until I satisfied myself that the tubercle bacilli were not to be found in cases of apex catarrh. The sputa was generally taken from well-marked cases. Because nothing was found in such cases I reason that they are not present in cases in which the physical signs are less well marked.

As to the case cited as having died of a "profuse hemorrhage," allow me to say the choice of this case was unfortunate. It is misleading, I confess. The point I especially wished to make is the importance of a chest examination in every case of disease of the ear or upper air-passages. The boy had a mastoid abscess. I suspected chest disease also, as I did not think that the local inflammation necessarily explained his constitutional condition. He had undoubtedly tuberculosis. The consultant was much older than myself, and because he wanted to do so he had ridiculed my ideas as to chest unsparingly. He suggested calomel and rhubarb because of the marked gastro-intestinal disturbance. I thought the chest ought to be examined and creosote given possibly. My suspicion was that he had an apex catarrh, whether it had advanced to a tuberculosis I did not know. Inadvertently the report of this case was not complete enough. I see many cases of apex catarrh. I see only a few cases of tuberculosis comparatively. My suspicions were in the line of the greatest possibility. I see probably a very different class of cases than occurs in Colorado Springs. As a specialist I see the very early cases of chest disease, whether the cases referred to are peculiar to Cleveland is a question. They are probably as frequent in other cities in the same latitude, and of the same elevation. I do not believe that cases of this sort develop in Colorado Springs. If they do, all reports as to the freedom of people living in that locality from disease of the chest is unreliable.

Dr. Moore sees a different class of cases from those I have attempted to describe. He sees the cases that become a localized tuberculosis, the cases that do not recover at home as rapidly as desired, and are sent to a higher altitude. In May, 1894, I looked up the record of the last fifty-four dispensary cases coming under my care, and found that of this number eighteen, had an apex catarrh. No one would believe that these cases had tuberculosis if I took that position. My professional friends have more often claimed that there was nothing at all the matter with the chest, that the patient had a primary disturbance of the stomach, etc. Dr. Moore thinks that I treat these cases too lightly. Clinically the only reasonable explanation of these cases is that they are catarrhal in character. The etiology of tuberculosis used to be very complicated. It seems to me now to be very simple. It is simply a question of "soil and seed." The tubercle bacilli are everywhere. Healthy tissues resist their growth. Tissues or cells weakened in vitality and resistance through inflammation permit of their growth and development.

A catarrhal inflammation attacks the epithelium lining the capillary bronchial tubes or air-cells at the apex of the lung. After a certain stage the tubercle bacilli are permitted to grow. Then we have a tuberculosis. Why the bacilli gain a foothold in such a small proportion of cases is probably explained by the fact that the catarrhal inflammation in the majority of cases close up before the vitality of the cells is greatly interfered with. I fully endorse the doctor's statement as to the frequency of tubercular cases and the frequency with which healed tubercular lesions are found on autopsy. I do not, however, feel very sanguine concerning cases of chest disease in which the tubercle bacilli are found. The great majority of such cases, as I have been hitherto permitted to follow them, have died of tuberculosis. Whether the presence of the tubercle bacilli in the sputa in fair numbers necessarily dooms a patient if he remain in Cleveland I shall not say. I have a very few cases on record who have apparently recovered.

The physical signs in an average case of apex catarrh on percussion are—no dulness, sometimes slight tenderness and slightly increased resistance; on auscultation transferrence of heart-sounds, rough breathing, slightly cog-wheeled breathing, slightly shortened inspiration, may be slight suppression of respiration, or may be transferrence of heart sounds only. I see many a case in which the physical signs are never more marked than this. If, after recovery from this disease the patient should meet death by accident or otherwise, and an autopsy could be made, does anyone believe that a pathologist could find any lesion remaining? I, for one, incline to think that its location even could not be determined. I do not believe such cases are tubercular. Neither do I believe that there is nothing the matter. I believe that the early detection and treatment of such conditions are of the utmost importance, and yet I am accused of minimizing the importance of early chest disease by giving it an innocent name. From Dr. Moore's remarks I infer that he either believes a patient to have a healthy chest or tuberculosis, and recognizes no intermediate stage. I believe that there is an intermediate stage, a pretubercular stage, that in the majority of cases can be diagnosed with the greatest ease. If I am wrong in my reasoning I shall thank any one who will point out to me the error of my way.

Very truly yours,

HOWARD S. STRAIGHT, M.D.

185 EUCLID AVENUE, CLEVELAND, O.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: By allowing a healthy discussion in the columns of your esteemed weekly regarding the question "Is Apex Catarrh Tuberculosis?" you will shed abundant light in minds that are still dark. It goes without saying that a correct understanding of the pathological process underlying the so called "apex catarrh," is of the utmost importance, not alone to the physician's reputation and success, but to his patient's future life and welfare. Study and observation have long made me a disciple of those who maintain that "apex catarrh" is of tubercular origin. And with a view to further strengthen my belief and conviction I have, with the splendid assistance of my friend, Dr. Philip Meirowitz, lately examined the sputa of a dozen patients, all of whom showed the so-called "apex catarrh." The patients were all taken from my clinic (Mt. Sinai Hospital Dispensary) with regard to no special selection whatsoever. In every single case tubercle bacilli were found. The number of them was never any too great, but, on the other hand, they were never entirely absent. In a few cases it was necessary to examine and re examine the same or different specimens in order to demonstrate the presence of bacilli. A little difficulty in attaining this end lies in the fact that in some cases there is no sputa to examine—the cough either being dry or the expectoration being extremely scanty. But this inconvenience is easily removed by resorting to some mild expectorant of one kind or another.

Now, in view of this and abundant higher authority, it seems to me that, if all those who agree with Dr. Howard S. Straight[1] in regarding "apex catarrh" as "a lo-

[1] MEDICAL RECORD, September 22, 1894.

calized capillary bronchitis," sufficiently invoked the microscope, they would certainly not be guilty of such gross pathological blasphemy. And it is exactly in this form of phthisis that the instrument is worth the investment. The difficulty of recognizing incipient phthisis is only exceeded by the importance of the recognition. The great majority of the patients with "apex catarrh," as a rule, do not bear as yet the various tubercular stigmata on their constitution. What brings them to the physician is an annoying cough or blood stained sputum. The cough is sometimes dry, sometimes moist, or attended with considerable expectoration. I have found the following physical signs in every case of tuberculosis of the apex, or "apex catarrh:" 1. Prolonged, harsh, but more frequently tubercular, expiration. 2. A more or less audible sibilant or sonorous râle. 3. Moist or a crepitant râle at the end of inspiration. The tubular breathing is invariably present, the other two come and go. I often heard the tubular breathing extending to some distance below the clavicle. The microscope, when appealed to, invariably confirmed the significance of this trinity of symptoms. At the early invasion of the apex, percussion is not worth trying, especially if the right apex is involved. Only a little while ago a member of my family consulted two physicians about a slight soreness in the chest. One prescribed for a subacute bronchitis, the other volunteered to relieve him of his turbinated bones. On seeing him I suggested a change of climate, for I made out an "apex catarrh." Two days later he was in bed with hæmoptysis—in three days he had nine pulmonary hemorrhages which exsanguinated him almost to the point of death.

Another instance of unrecognized phthisis of the apex: A girl, about eighteen years of age, came to my office with a history of a dry cough of long standing. A week before she consulted a doctor whose name is familiar to a considerable portion of the profession in this city. Her mother was told that the girl had only a slight catarrh of the throat which will pass off in a few days. But it didn't. On examination I found the three mentioned symptoms at her right apex, and somewhat extending a little below the clavicle. On informing the anxious parent that her child had a "touch of consumption" she immediately expressed a desire to consult a professor, a wish that I am always ready to gratify. I referred her to one of our most eminent diagnosticians in town, stating my diagnosis. The following was his usual cautious reply: "The girl evidently has a chronic broncho-pneumonia of the right upper lobe. Whether it is tubercular or not can be known by the examination of the sputum." The sputum has been since examined twice, and each specimen revealed bacilli, though in limited number. I could mention many more such cases of apex catarrh where the real tubercular nature of the catarrh was entirely overlooked. Especially is this statement true in cases of apex catarrh associated with disease of the upper air-passages, for then the impression takes root in the minds of the superficial observer that the same inflammatory process that characterizes the mucous membrane of the nose, pharynx, or larynx, exists in the apex. Dr. Straight states in his paper that with the improvement of the catarrh of the apex the affected upper passages improve. Certainly so! for it is more than an ordinary likelihood that the catarrh of the apex is responsible for the disturbance of the upper passages. The same gentleman states that he derived great benefit from creosote in all such cases. It seems to me that this beneficial effect of creosote on the disease in question should have made him think of tuberculosis. There is no other disease that is so favorably influenced by creosote as pulmonary tuberculosis—not one. This statement is doubly true with regard to incipient phthisis. One has only to see the wonderful improvement of all the symptoms in pthisical dispensary patients, a class of people mostly living in wretched surroundings, to be convinced of the specific action of creosote.

I have dwelt largely on this question, for I think its importance cannot be overrated. It is but proper that we should call things by their legitimate names—and there is a good deal in a name. In the great science of modern medicine a rose cannot smell as sweet by any other name.

R. ABRAHAMS, M.D.

156 CLINTON STREET, NEW YORK, October 22, 1894.

IS MALARIA A WATER-BORNE DISEASE?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In the MEDICAL RECORD of September 15, 1894, Dr. W. H. Daly, of Pittsburg, in a long letter, most emphatically asserts that such is the case. He gives his personal experience in the Kankakee swamps, he quotes other medical men who think as he does, and now Dr. Norbury, of Jacksonville, Ill., in his letter of October 6, 1894, endorses Dr. Daly. Well, I venture to slightly disagree with the sweeping claim these gentlemen make that malaria is only contracted by drinking shallow well or surface water. This town has a water works and the water is considered good. Every care is taken to prevent contamination. It is generally used by all who live within the village limits.

Some months ago the western part of the town had a new sewer laid, the streets were opened up, and just as sure did they begin to dig malaria developed along the course of the ditch, while other parts of the town were free. The persons attacked were of all nationalities—Italians, Irish, Germans, Swedes, Negroes, and last but not least, native-born Americans. The water they used was that supplied by the Water Company, and so it went, as the street was opened in the immediate vicinity were the sick to be found. My own little boy, two years old, developed an acute attack. No sewer was laid near my house. He did not get it from or through any water, for what he drank was sterilized. It was not his milk, for that went through the same process. My neighbor dug up a lot back of my place that had not been disturbed for ages, and I firmly believe that turning up the soil caused my child to sicken, as the colored servant girl complained of the well known symptoms a day or two after.

In my practice it is a common occurrence to find nursing infants with well-marked malaria—little things that never drank a drop of water. I saw a woman, sixty-three years old, develop malaria, the old-fashioned kind as they say here, chills and high fever (105° F.), who never had it before in her life, and who has been living in the same house and using the same water for six years. I looked about for a cause, and found that a cellar was being dug next door. Two days afterward I was called to see another member of the same family. These people attributed their sickness to the turning up of the ground, and I certainly agree with them.

Dr. Daly's claim that we take in our malaria on the leaves of turnip-tops, greens, kale, spinach, cabbage, is very far-fetched, if not absurd. These vegetables are not used raw. They are boiled, and if lettuce is used uncooked, the majority of people smother it in vinegar.

I am an unfettered, and I hope an original, observer, although I do not agree with Dr. Daly, and I claim that malaria is not a water-borne disease *"pur et simple,"* and that those old dogmas and text-books are deserving of respect, and were not so far wrong after all. Quinine, et cetera, were useless in my child's case.

He was treated by Dr. Tifft, of this town. Change was recommended by the Doctor, and so we sent him to his mother's native place, Pittsburg, Pa., where he has made a complete recovery, and now drinks the water used there, which certainly is not uncontaminated, and, considering its source, should be fruitful in malaria. Still I believe Pittsburg has but very little of this disease.

As to Dr. Norbury's forty Swedes, why he himself says they were peculiarly susceptible, and from my experience I agree with him, and further, that newly

landed emigrants are specially liable to contract malaria even in New York City. That it may be and is conveyed by water, I admit; but that it is the only way that we can become affected my experience has led me to believe differently.

F. W. DALRYMPLE, M.D.

NEW ROCHELLE, N. Y., October 10, 1894.

THE MARRIAGE OF SYPHILITICS.

A REPLY, WITH EXPLANATIONS, TO THE QUERIES OF DR. BURNSIDE FOSTER IN THE MEDICAL RECORD FOR OCTOBER 6, 1894.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Hypothetical questions in medico legal cases are perhaps justifiable, and are frequently resorted to, but as a rule the answers given are so vague that the meaning is about as clear to the average hearer as a strong infusion of common earth in water.

The three questions propounded by Dr. Foster may not be in any sense hypothetical, but the majority of the readers of the MEDICAL RECORD who have had any experience in the management of cases of syphilis will bear me out in the statement that not one in fifty *can* answer question No. 3 at all, and I will give my reasons later on.

As regards query No. 1. To answer it: that he has seen *any* case at *any* period communicated by a patient under his care, would lead the readers to say that the physician had been derelict in his duty in not impressing so forcibly upon his patient the dangers he so constantly bears about upon his person that he (or she) will not endanger the health of others by exposure.

The first aim, the highest duty of every true physician, is, or at any rate should be, to protect the health of those who are placed, either directly or indirectly, in such a position as to be saved by him from any contagious disease. I believe, through the columns of another journal, in an original article already accepted, I shall show at an early day some arguments, based on a large experience and continuous observation, demanding protection to the innocent from one of the blighting curses of our nineteenth century.

Passing on for the present to query No. 2, and no one among the thousands of readers of the MEDICAL RECORD will appear who cannot, from either personal knowledge or good evidence, furnished in journals and medical textbooks, cite cases almost without limit, where syphilitic men and syphilitic women have been the parents of syphilitic children, either alive or still born, at full term, at all periods after the initial sore, limited only by the menopause in the female or senility in the male. In fact, almost every physician will tell you that it is the rule, almost as certain as that the "day follows the night," that syphilitic female or syphilitic male WILL procreate syphilitic progeny. Admitted that, under proper treatment of the mother during gestation, an *apparently* healthy child may be born; but wait the next generation and see what is the result, as is too often instanced all about us.

No. 3. Any physician, if allowed to cut query No. 3 off where the *query* proper ceases, will, and so every reader of the MEDICAL RECORD will, answer YES.

With the limiting conditions attached to the end of the query proper, as I said at the beginning of this paper, not one in fifty can answer at all. In the first place, our authorities state, and we have all been taught, that we should always say to every syphilitic case which comes under our care, "that TWO years must be devoted to the careful attention of the malady." How many of our readers can keep the case for even two years? How many have had any individual case "constantly under observation" during *four* years?

If any physician has influence enough over the dulled sensibilities and selfish natures of their syphilitic cases to keep them under constant observation for four years, he certainly should have force of nature sufficient to prevent the patient exposing the innocent to the danger of communication by contact, either with original lesion or secondary mucous manifestations; at any time *such* danger may be present, and to carry the influence still further he should not during that *four* years permit the possibility of the syphilitic patient becoming a parent.

To sum up on the queries, I will say: Whether under observation or not a syphilitic can communicate the disease at any time, while either the original lesion or any external or internal mucous lesion is present, in whatever stage and at whatever period; that they do not do so even more than they do, is due to the force with which the true physician impresses the patient with the necessity of absolute *non-contact*. A syphilitic man or a syphilitic woman can, and do, become the parents of syphilitic children at all periods after the initial sore, limited only by the period of ovulation in the woman and the natural results of age in the male.

Plenty of cases are obtainable where four, fourteen, or twenty-four years after the initial chancre, under any and I may say *all* treatments, that syphilitic men and syphilitic women have been the parent or parents of syphilitic children. And the few cases that can be brought forth where syphilitic men or syphilitic women have brought forth *healthy* children, no matter at what period the antisyphilitic treatment has been applied (before or during gestation) with the mother, are misleading, and are but a small percentage of births occurring in the families of parents who have ever suffered from syphilis. And if such, as before stated, *apparently* healthy children be watched to the period of their maturity, you will find weakened bodies, blunted intellects, early decay; and if they happen to be the parents of the third generation the child must come under the Bible declaration and bear the "sins of the parents." Hydrocephalus, basilmeningitis, *scrofula*, *marasm*, idiocy, and the many like *conditions*, are the harvest reaped from past generations. With a brief expression of my ideas in the matter of "the marriage of syphilitics," I will close.

No matter what the treatment, and no matter how *apparently cured*, syphilitics cannot procreate a fully vigorous, healthy, strong, and noble type of manhood. Where is the benefit to accrue to the nation that is populated with weak minded, feeble-bodied humanity? Breeders even of stock select but the BEST with which to increase their herds—why should man, the noblest work of God, do any less? What is the excuse for willingly *permitting* marriage of our syphilitic cases? It is our duty as guardians of the public welfare, and holding the position, as we do, of guardians of the public health, to advise all syphilitics *never* to marry, and use all possible means to prevent their marriage. There is but one argument that can be brought to bear in favor of *permitting* syphilitics to procreate, and that is "That some wealthy man or woman may have children as heirs to their estate." It were far better that the estate have no heir than that the heir must inherit such a physical body as such parentage bestows. Wealth and a weak body are a poor inheritance. Physical and mental strength inherited, and life is sweet.

Professor Richard A. F. Penrose once said to the students of the University of Pennsylvania, in a personal lecture for their welfare: "When the superintendent of a building wishes to rear a structure that shall be an honor to his name, he selects the best materials for its construction. From poisoned syphilitic bodies you cannot raise up sons and daughters that shall be an honor to yourself and a benefit to your race. For God's sake, young men, keep your *building material* first class."

It now becomes our duty to advise everyone the same, and also to prohibit, if possible, by strong arguments and the evidences around us "the marriage of syphilitics," and use every means in our possession to have the *building material* of our patients first-class.

FRANK E. MAINE, M.D.

AUBURN, N. Y., October 26, 1894.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 3, 1894.

	Cases.	Deaths.
Tuberculosis	84	87
Typhoid fever	39	14
Scarlet fever	50	7
Cerebro-spinal meningitis	0	2
Measles	29	3
Diphtheria	103	29
Small-pox	11	2

The New York Academy of Medicine and the Constitutional Convention.—The following is the report of the Committee of the New York Academy of Medicine appointed to confer with the Constitutional Convention:

New York, October 6, 1894.

The President and Fellows of the New York Academy of Medicine.

Gentlemen: Your Special Committee appointed to confer with the Constitutional Convention respectfully submits the following report:

After several meetings the Committee decided to avoid all questions which could in any way be imputed to political bias or a desire to push the interests of the profession. Three problems were selected for discussion, and three recommendations made. All are of vital interest to the community. Your Committee appeared before the appropriate Committees of the Convention and recommended the following amendments to the Constitution of the State.

From Art. X., Sec. 1, strike the word "coroners." Into the same article and section introduce the words, "Medical examiners shall be appointed by such County authority as the Legislature shall direct."

We sought the abolishment of the coroner system on the following grounds:

(*a*) There should not be vested in one individual the functions of a scientist and of a judge; but the two should be kept separate and distinct.

(*b*) It is the sole purpose of an inquest to detect crime. That is a judicial function, and the determination of the question "Has a crime been committed and by whom?" rests in the interpretation of facts by judicial inquiry.

(*c*) It is the sole purpose of an examination to determine whether a death be due to violence. The examination should be made by a competent scientist, in order that facts may be obtained for interpretation by a judge.

(*d*) The examiner merely ascertains that the death is one of violence, the judge, that a crime has been committed. There should be no confusion of the two offices and no association in duties.

The confession of weakness in the present system lies in the appointment by coroners of "coroners' physicians." Thus a coroner with judicial powers appoints and controls him who shall furnish the coroner with the data requisite to his conclusions. A judge should be divorced from interest in the premises upon which he bases his opinions. The proposed amendment seeks the appointment of physicians only as examiners, and may be termed "class legislation." But already a "class" has control of examinations, inasmuch as these are held by "coroners' physicians." So, practically, no innovation was sought. The provision of a proper judiciary for acting upon the findings of the examiners we left to the Legislature.

(*e*) It is our belief that the coroner fails too often to detect crime, does not adequately protect the innocent because of that failure, and that the present system is open to abuse.

The Convention has agreed to submit to the people an amendment striking out of the Constitution all reference to coroners; but it refused to substitute any other system for the present abominable one. This will leave the law governing coroners upon the statute books. If the amendment is approved, the office of coroner merely ceases to be a constitutional office. Something will have been gained when the amendment is adopted.

The second recommendation by your Committee related to the Regents of the University. Amend Article IV. by the addition of a Section with these or similar words: "The Regents of the University shall consist of such persons as the Legislature shall direct. The Regents of the University shall have the sole power to grant licenses to practise medicine and surgery, and shall perform such other acts as the Legislature may direct. The Regents of the University hereafter appointed shall each serve ten years."

The Legislature has already conferred upon the Regents the sole power to grant these licenses. Therefore, here again, no innovation was sought. But this power has been placed in the hands of Regents appointed for life. Herein lies a possible abuse of power. We, therefore, asked that each subsequent appointee should serve but ten years. Inasmuch as reappointments could be made, efficient officers could be retained in office, and the limited tenure of office would preserve the people against the work of a mischievous clique in the Regents. No fault may now be found with the work of the Regents, but we must all confess the possibility of a bad element getting control. Should such a thing happen, death alone could put a stop to it. We would call your attention to the fact that the Regents are the only officers under the proposed Constitution who hold a life tenure of office.

For many years the medical profession has striven to elevate the standard of medical education in the State, and to have set some one standard of excellence to which all those seeking licenses shall attain. In these labors you have been conspicuous. Even though the Regents become constitutional officers, nothing will prevent thwarted incompetency and unsatisfied greed getting the existing beneficent and protecting law annulled. The profession must be as unceasingly alert as before, lest the Legislature be induced, unwittingly perphaps, to legislate unfavorably for the interests of the people. The interests of the community demand that a law so materially affecting the well-being of all be removed from the possibility of too frequent change in this vital feature. Unless their tenure of office be limited the incorporation of the Regents into the Constitution will be a menace to the best interests of medical education in the State, and for the reasons pointed out. Merely making them constitutional officers does not insure to them the permanent and sole right to grant medical licenses, and does not make them answerable to any authority for misconduct. It is altogether a bad amendment. We will have to fight for all we have gained in the past, and a new issue is introduced, in that we will be compelled to watch carefully lest evil men be made Regents.

Our last recommendation related to the great Department of Public Charities and Correction, of which so many of you are officers.

Amend Article X. to read:

Section 1.—"Sheriffs, Clerks of Counties, including the register and clerk of the city and county of New York, district attorneys, and in the counties of Kings and New York, one commissioner of prisons and one commissioner of charities shall be chosen by the electors of the respective counties, once in every three years, and as often as vacancies shall happen."

We submit a brief for our reason for requesting that the Department of Public Charities and Correction be made into two county offices:

1. The condition in the counties of New York and Kings does not exist elsewhere in the State, inasmuch as the cities of New York and Brooklyn are in themselves

the counties named. There is, therefore, no reason why those city offices should not be made county offices.

2. It is manifestly preferable that where a city is a county, in all important city and county offices the power of removal should lie with the Governor.

3. As the present commission is composed of a number of individuals, it is difficult to punish any one of the commission for incompetency, the responsibility being divided. The removing power is at the same time the appointing. The present system is cumbersome, and fails, in that more than one must consent to the performance of each single act, thus retarding the business of the department over which the commission presides. Or else power must be delegated to one commissioner in order that work may be efficiently and speedily performed. This latter, in fact, is the method these many-headed commissions adopt. If delegated power to one commissioner be sufficiently effective, why a plurality of factors?

4. The proposed addition to the Constitution deals with two great classes of the community: those who merit punishment at the people's hands, and those who are their wards. A certain system is requisite for the execution of punitive and correctionary laws, another for the gratification of the people's charitable impulses.

Prisoners require for their management a system far different from and a genius almost opposite to that essential to the proper conduct of hospitals and asylums. Inasmuch as the cities of Brooklyn and New York are the Counties of Kings and New York, and as a very large percentage of the population of the Counties of Kings and New York become inmates of their correctionary and charitable institutions during the year, the importance of embodying a suitable article in the Constitution relative to the commissioner of prisons and the commissioner of charities is apparent. As before said, these cities are unique in being counties. The management of these vast armies of criminals, paupers, insane, and sick, by one commission, with two distinct and dissimilar systems, is not consistent with the best results.

It is questionable if the numerous "Boards of Visitors," "Aid Societies," and "State Visiting Societies," etc., etc., could have originated, if satisfactory management marked these departments.

5. Not alone the State, but the country as well, has been shocked by the results of the recent investigation by the State Commission in Lunacy.

The fault lies in the entirely wrong association of two absolutely opposed systems under one commission.

6. The one great argument used by those who advocate this association is that two commissions would greatly increase the *per capita* cost of maintaining the sick and needy, inasmuch as much of the unskilled work about asylums and hospitals is done by criminals. This contingency could easily be met by a system of requisitions by one commissioner upon the other, a system now practically employed.

7. It is a matter of *common rumor*, as well as a demonstrated fact, that the present system is a failure.

We therefore request that these two commissions be made county offices under the Constitution, and thus removed from insecure and imperfect legislation in one most important particular.

This amendment was refused us. So many more important questions were before the Convention that the dominant party feared to load these down with others which might enlist enemies against their recommendations to the people. We suggest to you that in the future there be appointed each year a Committee whose duty it shall be to watch legislation, and to make to the Legislature such recommendations as you wish to become laws.

The fate of the proposed amendments none can foretell. Should those in which we are so interested be accepted by the people, we will still have to continue urging certain changes in the laws.

The regents should serve for such time as will protect us, while giving us the most efficient work. Sufficient medical examiners should be appointed by the proper county authority. There should also be one judge, well salaried, a man skilled in jurisprudence, whose sole function shall be to determine whether deaths are due to criminal violence. He would have to report to the district attorney's office. Such a man could do all the work now performed by the number of coroners. Some provision should be made for the regulation of the practice of midwifery. The injustice at present is in compelling an obstetrician to pass a certain examination before the regents, while a small fee confers almost equal rights upon a woman, without any inquiry as to fitness. If license to practise midwifery were conferred upon the competent only, we believe that the death rate would be lowered, and one very great cause for diseases of women appreciably removed.

We would also call to your attention the fact that by law a medical man is debarred from being president of the Board of Health, a most unjust discrimination against the very class of men from whom such officer should be chosen.

Your committee was courteously received and granted all hearings requested. Taking into consideration the dislike which the legislator has to the scientist meddling in law-making, we have been fairly successful. We desire to express to you our appreciation of the honor you have conferred upon us, and beg that wherein we have failed of complete success will be overlooked in the earnestness of our efforts. Respectfully,

WILLIAM R. PRYOR, M.D., *Secretary*.

The Action of Sunlight on Micro-organisms.—The following correspondence has been sent us for publication:

RAPIDS P. O., LA., October 15, 1894.

SURGEON GENERAL U. S. A.

DEAR SIR: I have discovered that the rays of the sun are a disinfectant and antiseptic. At 110° to 120° F. they will arrest decomposition and destroy microbes. I have directed them on old and new sores on man and beast, and in an incredibly short time a sun-bath will destroy corrupt matter and leave a bad sore in a healthy condition that will heal up in a short time. For instance, two bad boils on the same person, one treated with washes, poultices, etc., taking a month or more for perfect healing, the other in less than one hour's exposure to the sun's rays, cleansed and healthy and healing in a few days. These, with a number of other tests, lead me to the belief that it will become a successful treatment for sores, ulcers, etc., of recent and long standing, especially in hospital practice.

I have called the attention of our local physicians, who tell me the treatment is not known to the profession, to their knowledge. I am not a physician, but made the discovery in the course of butchering animals for market, the particulars of which and subsequent tests I will send if deemed of any importance; if proving to be, I want it given to the medical profession at large. Not knowing just how to reach them I concluded to write to the Medical Department, United States, which could make such tests as would prove its efficiency. Mine were made with the direct rays of the sun on days when the thermometer ranged 96° to 98° F. in the shade. I have given much thought as to how, in a northern latitude and cooler weather, the rays could be directed through a lens made for the purpose. Also have made the treatment on other ailments besides sores, and the results prove to me that it will become one more of nature's remedial agencies in curing and helping many ailments to which the human race is subject. This may be known already to the profession, but so far as I am concerned it is original, and came about as the result of some things to which my attention was called.

Hoping my motives may be understood in this communication, I am,

Yours respectfully,

JAMES T. DEZENDORF.

War Department, Surgeon-General's Office,
Washington, October 18, 1894.

Dear Sir: I have read your letter of October 15th with interest. Very numerous experiments have been made during the last few years with reference to the action of light upon various microbes, and it is well settled that the direct rays of the sun very promptly destroy the vitality of many disease-germs. Some observations have also been made with reference to the therapeutic use of sunlight, and it is certainly desirable, in view of the facts already known, that further clinical experiments should be made in this direction. Your own observations are of great interest, and the spirit in which you communicate them is highly commendable. If you authorize me to do so I will publish your letter, and my reply to it, in some medical journal.

Very truly yours,
George M. Sternberg,
Surgeon-General U. S. A.

Mr. James F. Dezendorf, Rapids Post Office, La.

A Model Surgical Clinic.—Scene, a spacious room. At a large table in the centre is seated the surgeon; his secretary is opposite, an enormous folio register open before him. A group of students is clustered about the table. Benches filled with waiting patients occupy the sides of the room. The secretary calls No. 120,736. A man aided by crutch and cane limps forward. The surgeon's examination into the biography and genealogy of the patient (four folio pages carefully written out by the secretary) being ended, the attendant removes the multiple wrappings of the right foot, exposing an inflamed great toe with ulceration upon one side of the nail. The surgeon gives it a hasty glance, and turning, addresses the students as follows: "Gentlemen, a few years ago a case of this kind—evidently an ingrowing nail—would have been at once submitted to local treatment, and, I admit, with fair prospects of obtaining a good result. But now that we have learned the general interdependence of the different organs of the body, we feel that a thoroughly scientific treatment demands the examination by specialists of these different organs, in order to detect any conditions likely to be etiological factors in the case. The attendant will therefore take him and a copy of his history to the different rooms in succession, and return here with their respective official reports."

(*Some Hours Later.*)

Surgeon (*loquitur*).—"Gentlemen, the patient has now returned to us, and I ask your attention while I read the reports of the various specialists."

Ophthalmological Department.—Case No. 120,736. This patient is myopic. As I recall a case where a similar visual defect was the cause of injury to the great toe in a person who "stubbed" it against the curbstone, I have ordered appropriate lenses to correct the difficulty, as a prophylactic against the recurrence of the disease. It is essential, however, that this treatment should be supplemented by wearing a loosely-fitting shoe.

Otological Department.—Case No. 120,736. I find no defect of audition. As the patient's trouble may have arisen from want of suitable support to the foot, I have thought it best to shorten the stapes leather two holes.

Rhinological Department.—Case No. 120,736. A case of nasal toe nail. Wishing to bring about a radical change in the parts, I have removed with the curette all adenoid growths, together with the adherent mucous membrane, from the cavities and packed them all with aseptic gauze—which should be removed if the patient wishes to sneeze.

Department Abdominal Surgery.—Case No. 120,736. Drs. A——, B——, and C——, in consultation. The history showing that the patient's mother during life lost a set of false teeth, Dr. A—— reasoning that "tooth and nail" are generally associated in action, is inclined to think the set may have been swallowed unconsciously and remained in the patient's stomach. Of course, he advises an operation.

Dr. B——, in view of the accepted belief that "Gallia est omnis divisa in partes tres," thinks it possible that one of them may have wandered down to the great toe, and advises an exploratory incision of the gall-bladder to ascertain if either part be missing. The "Gallic boot of love," cited by Dr. O. W. Holmes, seems to indicate a tendency of the gall to the foot.

Dr. C—— concurs entirely with both of these opinions, but on general grounds advises the removal of the appendix. The patient, however, avers that this has been already done, and that he has it in a bottle at home, which he will fetch if required. It is therefore deemed advisable to await further development.

Gynecological Department.—Case No. 120,736. Palpation reveals no abnormal condition of uterus or appendages. A medical student calling our attention to the fact that the patient wears pants and has well developed male generative organs, we doubt if this is a proper case for this department.

Department Genito-urinary Diseases.—Case No. 120,736. Organs apparently healthy. It, however, is not impossible that the patient may have had a stone (vesical) which was passed naturally and impinged upon and injured the great toe.

Department of Neuroses, etc.—Case No. 120,736. The result of a careful examination of this case indicates a deficient innervation of his lower extremities. Two well-marked areas of impaired sensibility or partial anæsthesia are located in the gluteal regions beneath the tuberosities of the ischia. His history not mentioning this, we questioned him as to how long the condition had existed. His replies were unsatisfactory—merely to this effect, that he had "sat so long upon those d——d hard benches that his —— got numb." A rubber cushion with two holes is recommended, and the case should be kept under observation.

"There, gentlemen," continued the surgeon, as he finished reading to them the reports, "you have the result of a careful scientific inquiry into this case. I shall now send the patient to the chiropodist around the corner, with instructions to have the toe cleansed and a piece of sheet lead inserted under the roughened edge of the nail. I counsel you all not to lose the opportunity of witnessing the operation. Good-morning, gentlemen!"—*Boston Medical and Surgical Journal.*

An Outbreak of Cholera.—The United States Consul at Sivas, Turkey, reports some interesting facts about the outbreak of cholera in that city. The city is about five thousand feet above sea-level, nevertheless the river which supplies the city with water became polluted with cholera dejections at a village about a mile above Sivas. The water which the people drink and use for all purposes about the house flows in open ditches, where the people also bathe and wash their soiled clothing and rugs. That which has served one family for its various needs flows with all its filth to another. Ultimately the water reaches the open sewers, or larger streams, which traverse the city and which receive all the excreta of the population. In these larger streams the people bathe, wash their clothes and kitchen utensils, the children wade and play. During the epidemic this went on as usual. This is just one of the myriad examples illustrating the spread of cholera by an infected water-supply; but note that, in spite of the fact that the whole population drank an infected water without boiling or other precaution, the consul reports that only twelve per cent. of the population contracted the disease, and only one quarter of these died. This indicates that a majority of the people were not susceptible to the infection.—*The Sanitary Inspector.*

Antidote to Snake-bite.—Dr. Mueller, of Australia, claims that strychnine is a certain antidote to serpent venom. The Indian Government has recently had a series of experiments conducted with a view to test its efficacy. The results thus far have not been entirely satisfactory, but the experiments are to be continued for two years more before a final judgment will be passed.

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Original Articles.

THE TREATMENT OF DIPHTHERIA WITH ANTITOXIN.[1]

BASED UPON A SERIES OF CASES TREATED AT WILLARD PARKER HOSPITAL WITH "ANTITOXIN SCHERING."

BY A. CAMPBELL WHITE, M.D.,

RESIDENT PHYSICIAN WILLARD PARKER HOSPITAL, NEW YORK.

HISTORY and experience tell us the most dreaded of all enemies of man are the infectious diseases. However benign the disease or mild the epidemic it always leaves some mark of devastation in its path; but one consoling feature of these so much feared diseases is the immunity granted by one attack against future invasion. This power of immunity seems to have been long recognized, for some centuries ago in India and China self inoculation was practised with virus obtained from the pustules of small-pox occurring in a mild epidemic; thus suffering a mild form of the disease protection was granted during future and more fatal epidemics. We have the authenticated report of Lady Montague, of England, as early as 1717, inoculating successfully her own son with small pox.

Although this practice was carried out to considerable extent for many years, it finally became very unpopular on account of its consequent dangers, many of those inoculated unfortunately developing the disease in its most fatal form. The first really practical application of this point of immunity was made by Jenner in 1798. We all know the history of his valuable discovery of vaccination against small pox, and how it has rendered that once most common and formidable scourge the least prevalent and least to be feared of all the infectious diseases.

From this time to the present most constant efforts have been made toward accomplishing similar results in the other infectious diseases, and the rapid advancement made in the field of bacteriology during recent years has rendered great assistance to a more intelligent and practical knowledge of this power of immunity.

Bacteriology was probably first successfully applied in this direction by Pasteur in the results obtained through his experiments upon immunization against certain animal diseases. He obtained immunity against anthrax and fowl cholera by the inoculation of weakened or attenuated bacilli. Still later we have the same method applied to hydrophobia, cholera, and diphtheria with more or less salutary results.

This entire work is based upon the principle that cultures of the most virulent bacilli can be made less and less virulent, until finally they are capable of producing only the mildest form of disease when injected into the living organism. But however carefully this process of attenuation has been carried out, however confident the experimenter may be that the virulence of the bacilli has been reduced to a minimum, there always must be some danger attending the inoculation of a human being with a medium containing the poison of perhaps the most fatal disease. To be successful some reaction must follow the injection. That this reaction may be greater and more pronounced than is desired or safe must always impress the operator and render the method less popular perhaps than is deserved.

[1] Read before the Pediatric Section of the New York Academy of Medicine, and contained in a report made to the Board of Health of New York City, November 7, 1894.

Recognizing this danger, others have labored in another direction, *i.e.*, to obtain the same power of immunity without using the disease poison itself. It has been found that the blood of animals rendered immune is capable, when inoculated in suspectible animals, of granting them the same immunity possessed by the animal from which the blood was obtained. This method is followed by no reaction. Whether the serum thus obtained acts directly upon the germ or its toxin, or whether it causes some reaction in the cellular tissues of the body rendering them proof against the germ or its toxin, is still a question of some dispute.

Buchner,[1] Tizzoni and Cattani[2] have carried out experiments on the antitoxin of diphtheria and tetanus which tend to show that the latter theory is the correct one. Still I believe this theory is not universally accepted. Whatever its action, this inoculation of the serum obtained from an artificially immunized animal is preferable to the attenuated bacilli method. The points in which the former differ from the latter make the serum method the safer and more practical of the two. The differences as described by Aronson[3] are—(1) the effect of the serum method takes place at once; (2) is accompanied by no reaction; (3) by increasing the amount of serum (antitoxin) protection against infection of any strength may be afforded.

This describes rather incompletely the two methods of bacterio therapy, and it is upon the second, or serum method, that the treatment of diphtheria with antitoxin is based; and to Behring, working in the Berlin Institute for contagious diseases, is due, more than to any other, its discovery and development. He found that not only could he grant immunity to an animal, but by giving larger doses of the serum of an immunized animal an attack of diphtheria already artificially developed could be modified or aborted. The method of obtaining this serum, as invented by Behring and modified by others, we will consider as briefly as possible.

First, a pure culture of diphtheria bacilli must be obtained. It has been found that the more virulent the bacilli, at least after some immunity has been established, the better the results which will follow. Aronson[4] claims that the strength and efficacy of his antitoxin depends chiefly upon this point, and describes an elaborate method by which the virulence of the bacillus can be made fifty to two hundred times stronger than fresh cultures from the most malignant cases. The extremely poisonous culture having been prepared, and its strength having been accurately determined, it is injected into the animal which is to furnish the serum, beginning with very small doses, which are gradually increased until the most powerful poison can be resisted by the animal. It requires many months to obtain such an immunity, and the constant liability to the loss of animals from an overdose of the toxine is very great. Animals are selected which have some susceptibility, but of course must not too readily succumb to the poison. The guinea-pig, dog, goat, sheep, cow, and horse have all been used. The horse, being less susceptible and furnishing more anti-toxin, is used by Aronson,[5] Roux, and Yersin,[6] and I believe more recently by Behring. The animal when

[1] Münchener Medicinische Wochenschrift, Nos. 24 and 25, 1893.
[2] Riforma Medica, October and November, 1893.
[3] Berliner Klinische Wochenschrift, No 15, 1894.
[4] Berlin Medical Society, July, 25, 1894.
[5] Deutsche Medicinische Wochenschrift, No. 19, 1894.
[6] Annals de l'Institut Pasteur, No. 9, 1894.

it has developed a high degree of immunity is ready to furnish antitoxin. The blood is obtained from the larger veins in the body, the animal first having been put under the influence of morphine or an anæsthetic. The serum is separated from the blood, and in this serum is contained the antitoxin. It may be mentioned that efforts have been made with some success to still further isolate this antitoxin property or to obtain it in a more concentrated form.[1]

Of course the serum coming from different animals, or from the same animal at different times, necessarily varies in strength, and to be used therapeutically some idea of its antitoxin power must be obtained. Ehrlich[2] describes a method employed by Behring for ascertaining (relatively) the amount of antitoxin in the blood-serum. This same method, with perhaps some slight modification, is used by all others.[3] He first determines the strength of his test-poison, *i.e.*, how much of this poison is required to kill a guinea-pig of a given weight in thirty six to forty-eight hours. He then takes of the test poison ten times the necessary dose to kill the animal, and puts this amount in each one of several test-tubes, together with different amounts of the serum to be tested. Salt-water is added in sufficient quantities to make all of the same bulk. The contents of these tubes are injected into as many animals. The reaction following the different injections determines the power of the solution tested, *i.e.*, the quantity of blood serum necessary to neutralize the poison (save the animal) varies according to the degree of antitoxin it contains. The strength of the solution is expressed by giving the amount of serum required to save an animal of a given weight inoculated with a fixed poison, *e.g.*, if it requires 0.001 c.c. of the serum to neutralize sufficient poison to kill an animal weighing 300 gr., the strength of the serum is as 1,000 c.c. is to 300 gr., or 1 part of antitoxin to 300,000 parts of body-weight. This can be expressed by simply saying the serum is a 1 to 300,000 antitoxin solution. With the addition of a small amount of trikresol to preserve it against decomposition, the serum is ready for therapeutic purposes.

In appearance the solution of Behring and the "immunization solution" of Aronson are alike. They look like diluted blood-serum. But the strong solution of Aronson has the appearance and consistency of dirty milk.

I have now attempted to describe the bacterio-therapy of antitoxin, the process of its development, the methods for determining its dose, and its appearance; but before considering this remedy clinically I wish to call your attention to some of the more important clinical features of the disease we are to treat.

In considering the results of any treatment for diphtheria the age of the patients upon whom the trial is made is always of vital importance in ascertaining its value. Any one who has had extensive association with diphtheria, at least in this city, and more especially perhaps in hospital practice, must have been impressed with the low mortality among adults. Even those suffering the disease in its severest form generally get well. In one hundred and eighty-eight cases of diphtheria, over sixteen years of age, treated at the hospital the mortality was less than three per cent. The mortality in diphtheria of children between five and sixteen years, although much higher than in adults, is still surprisingly low for a disease commonly considered so fatal. At this hospital the past year the mortality among children of this age has been 13.6 per cent.; in 1893, twenty-two per cent.; and in 1892, 11.7 per cent.

Diphtheria, therefore, as far as mortality is concerned, is essentially a children's disease, and it is among children under five years of age the disease causes such appalling disaster. The mortality in five hundred and six children, under five years, treated in the hospital for the past two years, has been 42.7 per cent. Therefore any treatment for diphtheria should be directed against the disease as it occurs in young children in order to thoroughly test its efficacy.

It has always been noticed, and is mentioned in nearly every treatise on diphtheria, that the mortality is higher during certain months in the year, *e.g.*, the highest mortality in the hospital during the last year was in the months of February, December, and August, and the lowest in September, June, and July. The difference in mortality between September, the lowest month, and February, the highest, was twenty-six per cent.

That some epidemics of diphtheria are more severe than others hardly needs to be mentioned. That bacilli vary in virulence we have mentioned before, and this has been established beyond a doubt by the researches of Brieger and Frankel,[1] Roux and Yersin,[2] Aronson,[3] and others. So we see the severity of the epidemic and the difference in virulence of bacilli in different cases of the same epidemic must also be considered when discussing the value of any new treatment. Where diphtheria is the true cause of death, *i.e.*, where death is due to the toxin generated by the Klebs Loeffler bacillus, the patient generally dies at some time during the first ten days from toxic infection, extension of membrane into larynx and bronchi, or occasionally as early as this a patient apparently doing well will die from sudden heart failure or paralysis. In those patients who die later than the tenth day death is generally due to pneumonia or paralysis, rarely nephritis, while in some rare instances the septic condition will persist for some time after the membrane has disappeared, finally causing death. In 170 fatal cases coming under our observation the past year 135 occurred within five days after admission to the hospital, 17 within ten days, and 18 after the tenth day. Of the 18 cases 9 died of heart-failure or paralysis, 2 of septic infection, 1 of meningitis, and 6 of pneumonia, twenty days after admission. Excluding the 9 cases of heart-failure and the 2 of septic infection, all the cases in whom diphtheria toxin was the cause of death died within the first ten days after admission, or the first thirteen days of the disease (the average day of admission in these cases being the third day of their sickness). Ninety per cent. of the cases died within the first eight days of the disease. Thus, taking all these facts into consideration, a remedy for diphtheria which will prolong the life of the patient beyond the thirteenth day will carry him beyond almost all danger of death and can truly be called a specific.

In studying still further these cases which die from diphtheria toxin, we find the mortality almost entirely confined to those patients who have false membrane, not on the tonsils and pharynx only, but added to this diphtheria of the posterior nares or of the larynx. Those cases which do not have false membrane in the nose or larynx generally recover, and a specific remedy tried on them could give no reliable results.

The proper treatment of diphtheria undoubtedly lowers the mortality, and without proper treatment and attention we believe every case of diphtheria affecting the nose and throat and larynx would die. The mortality of all cases treated at the hospital during the past two years has been between twenty-eight and twenty-nine per cent., and the treatment pursued in these cases we cannot but believe has had more than a little influence in maintaining so low a percentage of deaths. The essentials of the treatment pursued in these cases are as follows: 1. Absolute rest in bed in recumbent position. 2. Fluid diet. 3. The room kept at an even and rather high temperature (75° to 80° F.). 4. Thorough, frequent, and complete washing of the nasal and throat cavities with a normal salt solution. 5. Tincture of the chloride of iron in large doses. 6. Stimulation and catharsis as indicated. In addition to this treatment we have depended almost entirely in the laryngeal cases upon

[1] Ehrlich and Brieger, Zeitschrft für Hygiene und Infectionskrankheiten, vol. xiii.
[2] Deutsche Med. Woch., No. 16, 1894.
[3] Annals de l'Institut Pasteur, No 9, 1894.

[1] Berliner Klin. Woch., No. 16, 1894.
[2] Annals de l'Institut Pasteur, pp. 385, 1890.
[3] Berliner Klin. Woch., No. 25, 1893.

calomel sublimations and moist heat applied externally, with operative interference when necessary.

That this treatment faithfully carried out and intelligently performed will prevent, in the majority of cases, extension of membrane, and in all cases the development of laryngeal stenosis, is evidenced by the small number of patients who suffer extension of membrane after entrance, and the extremely rare event of a case of stenosis appearing after admission. I only know of three cases developing stenosis after entrance, and in every one there was an undoubted history of exposure to a draught from an open window. Nevertheless, in opposition to all our efforts with this method of treatment, for which we claim so much, there still confronts us a class of cases that furnishes a frightful mortality, and makes diphtheria the most fatal of all the infectious diseases with which we come in contact. The cases we refer to are always dangerous at any season of the year or in any epidemic, however mild that epidemic may be, and it is from this class of patients we have selected the cases for the antitoxin treatment.

The serum used in our cases is made by Aronson, and was kindly furnished to us by Schering & Glatz, the agents for Aronson's antitoxin in this country. This solution was several times stronger than that first and last sent over by Aronson, called the "immunization solution," which corresponds to Behring's "normal antitoxin." Diphtheria poison sufficient to kill control animals weighing from 300 to 400 gr. in thirty eight to forty-six hours is completely neutralized by .00025 c.c. to .00033 c.c. of the stronger or concentrated solution. The age of the patient, the duration of the disease, and the severity of the case, must all be taken into consideration in determining the dose to be given. The injections were made under all aseptic precaution, and in no case was there any sign of local inflammation following the injection. Instead of injecting the entire quantity in one place we selected several locations, the interscapular region and the buttocks.

The following table shows the general results obtained, the amount of antitoxin injected, and, as far as possible, describes the local condition of the different cases:

Day of Disease on which Patient first came under Treatment.	Number of Patients.	Average Age in Years.	Number of Cases in which Nares, Tonsils, and Pharynx were involved.	Number of Cases in which Tonsils or Pharynx were involved together with Larynx.	Number of Cases in which Tonsils, Pharynx, Nares, and Larynx were all involved.	Number of Injections of Antitoxin.	Average Amount of Antitoxin per Patient.	Rash following Injection.	Intubation.	Tracheotomy.	Albuminuria.	Paralysis.	Number of Deaths.	Mortality.
							c.c.							p.c
3d.....	7	3.5	4	2	1	10	11.3	3*	2 ..	1	1	2	2	28.5
4th....	4	2.8	1	2	1	7	8.0	..	1 ..	1	1	..	..	..
5th....	5	3.4	1	1	3	7	9.4	..	.. ..	1	1	1	1	20
6th....	1	2.0	..	..	1	1	5.0	..	.. ..	..	..	..	..	..
7th. ..	2	1.5	..	1	1	3	6.5	..	1 ..	..	1	1	1	50
8th....	1	2.0	..	1	..	2	12.0	..	.. 1	..	.	1	1	100
5tht...	20	3.0	6	7	7	30	188.0	3	4 1	3	4	5	5	25

* One of these case was undoubtedly true scarlatina, and another was diagnosed as a doubtful case of measles. In the third case the rash disappeared in a few hours without further symptoms.

† Totals.

This tabulation shows 14 were laryngeal cases, with additional membrane on throat or nose. Five of the cases were operated upon; 4 intubated, and 1 tracheotomized. Of these 14 cases, 1 intubation case, three years old, died on the twenty-fourth day with lobar pneumonia. The bacilli were absent in this case seven days before death, and at one time we had considered the child recovered. The tracheotomy case, two years old, died on the thirty-fourth day with broncho-pneumonia. In this case there was a history of exposure to cold four days before death, and the bacilli had been absent some time. Two cases not operated upon died: One a girl, six years old (the only case treated over five years old), died from sudden heart-failure on the twelfth day. On this patient treatment was not begun until the fifth day, and at that time the child was in a terrible condition—skin moist and cold, color bad, stenosis quite well marked, membrane on tonsils, uvula, pharynx, and nares, diffuse swelling of glands in the neck, temperature a little below normal, and pulse, 114, and weak. Could hardly expect child to live twelve hours. Stimulants were given, irrigated once, and 12 c.c. of antitoxin injected in four places. Twelve hours later the improvement in general condition was marked; in fact, the rapid improvement in this case was more noticeable than in any of the others. The child continued doing remarkably well for six days, when we considered her practically out of danger. But on the following day the child suddenly went into syncope and died three hours later, stimulants and restoratives being of no avail. A slight paralysis of the soft palate was noticed the day before death, and the membrane at this time had entirely disappeared. We regret that a larger or repeated dose of antitoxin was not given in this case. The other death was from pneumonia, in a child two years old, all signs of membrane having disappeared twenty days before death.

Of the six cases which had no laryngeal complication, but which had membrane on tonsils and pharynx and in the posterior nares, only one died. This child, five years old, developed a bad scarlatina, and died fifteen days after beginning of his diphtheria and five days after beginning of his scarlatina. The membrane had disappeared on the tenth day, and the child at this time was in excellent condition. During the course of treatment large plugs of membrane were removed from the nose. The case received 20 c.c. of antitoxin, the largest amount given to any one patient.

Theoretically, the antitoxin could only have prevented one of these five deaths, the child who died with sudden diphtheritic paralysis of the heart on the twelfth day of the disease, for in none of the other four cases was death due to the diphtheria toxin. Then, excluding these four cases, we have one death in sixteen, or a mortality of 6.2 per cent. in cases, the average age being three years, selected on account of their severity. Including all deaths the laryngeal cases showed a mortality of 28.5 per cent. as opposed to the regular mortality of over 50 per cent., and the other cases give a mortality of 16.6 per cent.

The treatment with the antitoxin was begun in the latter part of July, having previously used the weaker solution on several cases, and extended through the following two months. Twenty cases were selected for treatment during this time, and every case was one in which a most unfavorable prognosis would have been given at time of injection, while in all other hospitals where the serum treatment has been applied all cases have been injected without regard to the age or condition of the patient. The latter method gives a larger number of cases, but is not so severe a test, unless the treatment extends over a long period of time. Good results obtained in this way can be claimed as due to the season of the year, or the mildness of the epidemic. Our cases differ in another important respect from most of those already reported, *i.e.*, the treatment consisted entirely of injections of antitoxin, with the exception of irrigating all cases once on admission, and two cases several times, for the purpose of removing membrane which completely plugged the nose. Of course stimulation was given when indicated.

The temperature of diphtheria is so variable, being sometimes low in the most severe cases and high in others, it is impossible to tell how much it is influenced by any treatment. In some of the cases the rise in temperature after the injection was marked, in others there was no decided change, while in still others there was considerable fall. This fall of temperature we notice in many cases soon after the entrance to the hospital, the temperature on admission probably being the so-called "ambulance fever." Streptococci, inflammation, and other complications also give a high temperature, and, of course, antitoxin could have no influence on these temperatures.

The effect upon the pulse is of much more importance. In nearly all cases nine hours after the injection the pulse was much improved in strength, volume, and frequency. The two following representations of the composite pulse and temperature curves of all cases will show what influence, if any, antitoxin had upon the temperature and pulse:

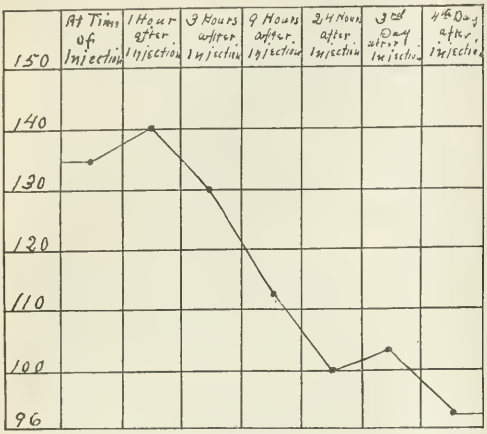

FIG. 1.—Composite Pulse Curve of the Twenty Cases.

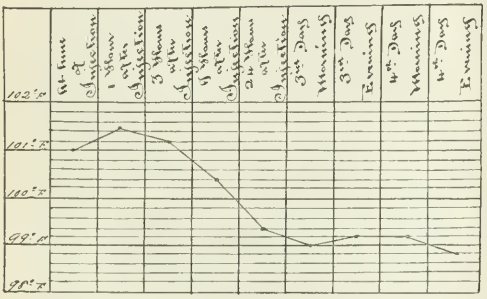

FIG. 2.—Composite Temperature Curve of the Twenty Cases.

The diphtheritic false membrane disappeared, on the average, on the ninth day of the disease. This is about the ordinary duration of membrane in most cases, but is probably a little early for cases so severe as these. The persistence of the Klebs-Loeffler bacilli, as would be expected, was not apparently influenced, the average time for disappearance of bacilli being the nineteenth day.

Antitoxin given early and in sufficient quantity, ought to prevent post diphtheritic paralysis, as it is now almost universally conceded that the paralyses of diphtheria are due to the toxines absorbed, and generally follow the more severe cases. Among the cases treated with antitoxin, four had post-diphtheritic paralysis. The paralysis was noticed on admission, the tenth, the eleventh, and the eighth days of the disease, treatment having been begun on the seventh, the fifth, the third, and fourth days of the disease respectively.

Albuminuria was present in three cases—in two cases on admission, and in the other case it appeared ten days after the injection. It lasted no more than three days in any case. No casts were found in the urine, and no unfavorable symptoms could be traced to the kidneys.

Diphtheritic or septic pneumonia occurred in no case, the pneumonia complications all coming on very late, as mentioned before. The pneumonia cases due to extension of membrane or infection from above, always begin in the early days of the disease and die within a few days.

Besides the twenty cases treated with the stronger solution, we have injected twelve other cases with Aronson's weaker antitoxin, called the "immunization serum." Some of these cases were quite mild, and received a small amount of the serum. They would probably have recovered in any case. Several of the bad cases received as much as 20 c.c. of the serum. On two patients tracheotomy was performed, one of whom died on the twenty-first day after the operation, the other making a good recovery. The age of the former was four years, of the latter thirteen months. Two cases were intubated; one died and the other recovered. Still another case died on the thirty-seventh day with pneumonia. All of these twelve cases were under five years of age, and give a mortality of twenty-five per cent. No death occurred until after the fifteenth day of the disease. There was not the marked change for the better in the general condition of the patient some twelve hours after injection, as was noticed in the cases treated with the stronger solution. We mention these cases to show the difference in strength between the two solutions, and to demonstrate, by giving larger doses of the "immunizing solution," that it can be used as a healing fluid.

In drawing conclusions from the results obtained with the treatment by diphtheria antitoxin, we must first be satisfied that it has at least some curative power, however slight or insignificant that influence may be. If we grant it has any appreciable influence when opposed to the toxin developed in a patient suffering with diphtheria, we must concede it is a specific for diphtheria; for the degree or amount of influence it exerts must, from the nature of the remedy, depend entirely on the strength of the serum and the care with which it is prepared.

Before deciding this question we may with benefit consider the results obtained by others, who have given antitoxin a fair trial. The following reports have, with two exceptions, come from the hospital of Berlin:

Korte,[1] through Vaswinckel, reports 60 unselected cases treated with antitoxin. Of these, 30 were severe cases, with fifty per cent. recoveries; 16 were quite severe cases, with eighty-one per cent. recoveries; 14 were light cases, with one hundred per cent. recoveries. Seventy per cent. of all cases recovered. Those cases having been excluded in which antitoxin could have had no effect, the total mortality was twenty per cent. Twenty cases were tracheotomized, with fifty-five per cent. mortality. The months previous to and following the treatment gave a mortality of 46.5 per cent. and in tracheotomies seventy-one per cent., or a total increase in recoveries under antitoxin of 26.5 per cent., and in tracheotomies a gain of sixteen per cent. He says no dangerous effects from the serum were observed; a few cases had some rash after the injection, and in a few cases albumin appeared in the urine.

Rinne,[2] through Schubert, reports 34 unselected cases, all of whom happened to be severe diphtheria in children, with a mortality of 17.9 per cent. The 6 patients who died were tracheotomy cases. Autopsies showed death to be due to septic pneumonia in 2 cases, mechanical plugging of small bronchi in 2 cases (so that tracheotomy did not afford relief), pronounced myocarditis and nephritis in 1 case, and the remaining case died after being discharged from hospital. The observer considers the serum an effective cure. The local symptoms improved rapidly, the effect upon general condition was more marked than any other (especially true of those cases with a very weak pulse) and a rash was noticed in several cases following injection. Much larger doses were used than experiments with animals would indicate.

Sonnamberg[3] reports 44 cases, with a mortality of

[1] Deutsche Med. Woch., No. 22, 1894.
[2] Ibid. Cases were treated at the Elizabeth Kranhenhaus, Berlin.
[3] Ibid., June 7, 1894. Cases treated at the Krankenhaus Moabit.

twenty-five per cent. Nine tracheotomies give a mortality of 37.8 per cent. Excluding 6 cases in whom antitoxin was not indicated, the mortality in all cases was 13 3 per cent. Improvement of general condition, rapid disappearance of membrane, and fall of temperature was noticed in most cases.

Strahlman[1] reports 48 unselected cases, with three deaths (two of sepsis and one tracheotomy), showing a mortality of 6.2 per cent. The immunization power was tried in 94 cases, and seemed to protect from five and a half weeks to ten weeks. He summarizes as follows: "The changes caused by injection were marked, the membrane disappeared quickly, temperature fell considerably, and general condition improved very perceptibly."

Roux, Yersin, Martin, and Chaillou[2] have studied clinically in l'Hôpital des Enfants Malades of Paris, and bacteriologically in the Pasteur Institute, over four hundred cases treated with their 1 to 50,000 antitoxin solution. They chose those months for the treatment in which diphtheria attains the highest mortality, and for comparison had the statistics of l'Hôpital Trousseau, where no serum was used, in the same city, covering the same period. The mortality for the four years previous to the treatment was 51.71 per cent. in 3,971 children. In 448 cases entering the hospital during the serum therapy the mortality was 24 5 per cent.; covering the same period the mortality among 520 cases at l'Hôpital Trousseau was sixty per cent. Therefore 27.21 per cent. represents the exact benefit obtained by the antitoxin treatment as compared with other years in the same hospital, and shows a difference of 35.5 per cent. in favor of the serum as compared with the regular treatment for diphtheria in another hospital during the same epidemic and in the same city. The mortality among pure anginas, without croup complicating, was twelve per cent., while during the same period at l'Hôpital Trousseau the mortality was thirty-two per cent., and previous to antitoxin in the same hospital it had been 33.94 per cent. The mortality in croup with serum treatment was forty-nine per cent.; at l'Hôpital Trousseau for the same time it was eighty-six per cent., and had previously been, at l'Hôpital des Enfants Malades, 73.17 per cent. Excluding some cases in which the Klebs-Loeffler bacilli could not be found, and others in which the serum treatment was not applied, the mortality among three hundred cases of true diphtheria treated with antitoxin was twenty-six per cent., or twenty-five per cent. better than any results obtained by former treatment for true diphtheria in the same hospital.

We find, then, of four hundred and eighty-six children (including operative cases) treated for true diphtheria by various observers, with different strengths of antitoxin solutions, one hundred and sixteen have died, or a mortality of 23.8 per cent. in a class of cases in which about fifty per cent. always die.

The first question—"Does antitoxin accomplish any appreciable good results in diphtheria?"—judging from our own twenty cases alone, can be answered decidedly in the affirmative. Otherwise we must believe is is sometimes possible to save over ninety per cent. of children suffering diphtheria in its severest forms with no other treatment than rest in bed. When we add to our own cases the results obtained by others, we cannot help but believe we have received in antitoxin not only a remedy that will grant immunity for a short period of time, but a specific that will, in every case, given early in the disease and in sufficient quantity, prevent death by the absorption of the toxine of diphtheria.

Long Life in Greece. — The German statistician, Bernhard Ornstein, has computed that Greece stands in the first rank among European countries in the number of centenarians. He attributes this to its climate.

[1] Allgemeine Medicinische Central-Zeitung, No. 58, 1894. Cases treated in Wildenhausen in Oldenburg.

[2] Annals de l'Institut Pasteur, No. 9, 1894.

ANTITOXIN IN DIPHTHERIA.

Second Paper, Being Extended Experience in this City and in Municipal Hospital of Philadelphia, with Some Practical Points in the Treatment of the Disease.

By LOUIS FISCHER, M.D.,

Instructor in Diseases of Children, New York Post-Graduate Medical School and Hospital; Physician in Charge of Messiah Home for Children; Attending Physician, Children's Department, German Poliklinik.

In the Medical Record of October 6th I published a report of a very successful case of diphtheria treated with Aronson's antitoxin. Since then I read an elaborate paper before the Post Graduate Clinical Society, October 13th, giving my results in many consultations, besides giving a brilliant outlook for the treatment of the septic, infectious like diphtheria. Moreover, the opportunity for testing the value of this agent arose in a hopeless case of puerperal septicæmia, and with astounding results. The details of this case will be published later on. It is safe, therefore, to assume that not only can antitoxin exert healing influence in toxins generated by the Klebs-Loeffler bacilli, but that they seem to modify, and possibly cure, other toxins generated in the human organism by germs distinct from those known to be the specific cause of diphtheria. Granted, then, that this is the case we can not only modify a severer type of the disease, but prevent complications which we all know to be the sole danger in diphtheria, besides cutting short the course of the disease and thus preventing serious damage to the heart and kidneys.

While no rule has as yet been definitely established as to what cases are and are not suitable for this new therapeutic agent, still extensive experience has already demonstrated certain positive facts. They are:

That diphtheria is not a self-limited disease, that it is always dangerous, and that if treatment is commenced early to guard against extension of same, we can sometimes avoid complications and save life.

We are, therefore, justified in applying antitoxin not only when we can already see the local manifestations of the disease, but when we have reason to suspect that a patient has been exposed and possibly infected. This will then bring me to the mildest kind of serum, and which has been called immunizing fluid.

This serum, made by Aronson, is clear, milkish-white, having a slight odor of trikresol, of which it contains 0.2 per cent. to preserve it and prevent decomposition of the albuminous ingredients.

If a child in a given family has diphtheria, it has been found that other children apparently healthy can, by receiving small injections of 2 c.c., be kept immune from diphtheria, and this immunity can be prolonged for several months.

In fact, Aronson found that when children treated in this way for prophylaxis, did contract the disease, the symptoms were so mild as to prove the fact that antitoxin had, in all probability, neutralized considerable of toxic matter in the human organism, and in this way most likely modified the course of the disease.

This immunity was not only lasting, but could be prolonged for some time by repeated injections, and thus the period of the immunity could be continued for many months.

The technique of the preparation of antitoxin is one requiring little or no skill, but owing to the great length of time required for rendering animals immune, this period sometimes extends over one year and more, hence the great difficulty in obtaining large quantities of serum.

Statistics in this city show from 1880–1887, for a period covering eight years, 5,923 cases, with 2,167 deaths, or an average of 42.62 per cent.

Nine years ago Henoch reported 319 cases with 208 deaths, in Berlin, or about 65.5 per cent. fatal. At Hospital Trousseau, in Paris, 1883, of 606 cases treated, 391 died, or 64.5 per cent.

So, taking three distinct parts of the world at about the same time, with most improved form of treatment, we have

Berlin mortality	65 5 per cent.
Paris	64.5 " "
New York	42.62 " "

Since then, the true bacteriological origin of the disease and our knowledge of antisepsis, tend to introduce a new course of treatment, although the old bichloride of mercury has stilln umerous adherents.

Comparing those statistics with the most modern, we find Katz reporting 128 cases of diphtheria, in a severe epidemic in the large Kaiser u. Kaiserin Friedrich Hospital in Berlin, with only 13.5 per cent. mortality.

When Professor Baginsky detailed the method of using the antitoxin treatment, he especially laid stress on the fact that this new remedy had influenced the statistics, and that the mortality fell from thirty-seven per cent. to thirteen and even eleven per cent. The result has never yet been equalled by the most improved form of treatment, and in our mildest epidemic.

How curious to note that under this new form of treatment all severe symptoms subsided in a few days, and rarely did an early case of diphtheria develop complications; and not in a single case was it necessary to relieve stenosis of the larynx by intubation or tracheotomy where the treatment was commenced early.

Even a complicating nephritis seemed to appear milder, showing a decided influence had been exerted by this new method.

Professor Roux, in Hôpital des Enfants Malades, in Paris, had 448 cases; of this number 109 died, a mortality of 24.33 per cent., contrasted with average mortality of four preceding years, when of 3,971 cases, 51.71 per cent. died.

A critical examination of the statistics for this year involved the drawing of a distinction between cases of true and false diphtheria. Of the 448 children admitted into the diphtheria portion, bacteriological examination showed that 128 cases were not infected wlth true diphtheria; further, 20 of the cases were already moribund when admitted. There remained, therefore, 300 cases which afforded a fair test of the efficacy of the treatment; they yielded 78 deaths, a mortality of twenty-six per cent., which must be contrasted with an earlier series of cases subject to the same eliminations, but treated by other methods, which gave a mortality of fifty per cent.

The rule in the hospital has been to give an injection of the serum immediately after admission of the child. The injection was not repeated if bacteriological examination showed that the case was not one of true diphtheria. In none of these cases was the injection followed by any unfavorable symptoms; it was not painful, and, if made with aseptic precautions, was not followed by any local disturbances. In cases of true diphtheria a second injection was given twenty-four hours after the first, and as a rule this was sufficient.

If the temperature remained elevated, a third injection even was given. As a rule a child received an amount of serum equivalent to one thousandth of its weight, but in a few cases the quantity reached one hundredth of the child's body-weight.

Under the antitoxin treatment, complications were observed in only a few cases, but in some paralysis supervened. Occasionally, during convalescence an urticarial eruption was observed, apparently due to the injections. The treatment appeared to diminish the liability to albuminuria.

A further classification was made of the cases of diphtheria by M. Roux. Taking first the cases in which the larynx was not involved, he said that in 120 of these the diphtheria bacillus was present alone; of these 9 died, a mortality of 7.5 per cent. But of these 9 children, 7 did not survive their admission into the hospital for twenty-four hours. Eliminating these, the mortality was only 1.66 per cent. Further, of the two remaining children who died, one was suffering from tuberculous peritonitis, the other from severe measles, so that it appeared that all cases of pure diphtherial angina ought to recover if treated in time. The false membrane ceased to develop twenty-four hours after the first injection, and became detached in all but seven cases before the end of the third day. The temperature fell rapidly in many cases after the first injection, in severe cases only after the second or third injection, and then more slowly.

In cases of diphtherial angina, complicated by the presence of other microbes, the results were equally good, except in those cases in which streptococci were present; the number of these cases was 35, of whom 12 died, a mortality of 34.28 per cent. This must be compared with a mortality of eighty seven per cent. in cases treated by other methods.

With regard to cases in which the larynx was involved, M. Roux distinguished two classes: 1, cases in which tracheotomy was not performed, of which there were 10, with 1 death, a case in which the diphtheria bacillus was associated with streptococci; 2, cases in which tracheotomy was performed, 121, with 56 deaths, a mortality of 46.28 per cent. Among these there were 49 cases of pure diphtheria, with 15 deaths, a mortality of 30.61 per cent.; but four of the patients died less than twenty-four hours after admission, and after deducting these the mortality was 22.44 per cent. Taking all the cases in which tracheotomy was performed, and eliminating 14, which died within twenty-four hours after admission, there remained 107 cases, with 42 deaths, a mortality of 39.25 per cent.

Good as these results were, M. Roux himself thought that they might still further be improved by more perfect isolation of the patients, since many of the deaths after tracheotomy were due to broncho-pneumonia, and it was noticed that a series of such cases might follow the admission of a child suffering from diphtheria of the larynx associated with the presence of streptococci. In favor of this argument of isolation may certainly be urged the larger percentage of recoveries obtained in private practice in this country, although many of the cases have fallen into the hands of practitioners with no previous experience of the serum treatment. It may be also that the source of the antitoxin had a depreciating influence, for nothing is stated beyond that the serum was obtained from the horse. Certain it is that the use of Dr. Aronson's antitoxin in the Berlin hospitals was accompanied by a larger proportion of success.

Dr. Aronson said that in the five months ending with July, he had treated with his serum 192 patients suffering from diphtheria, as ascertained by bacteriological examination. The mortality was fourteen per cent. In 23 cases the children were moribund when admitted; eliminating these, there remained 169 cases, with 19 deaths, a mortality of 11.2 per cent. This contrasted with a mortality in the same hospital varying, in three years before the adoption of the antitoxin treatment, from 32.5 per cent. to 41.7 per cent.

Eighty-two cases had been treated by the serum in other hospitals in Berlin, and the general mortality of the whole series of 274 cases was 15.3 per cent. The antitoxin serum had also been employed with the object of producing immunity in the children belonging to families in which a case of diphtheria had already occurred. Among the 130 children thus inoculated, 2 only contracted diphtheria, and that of very mild type.

Professor Heubner, gives his experience of the use of antitoxin serum in the children's department of the Charité Hospital, in Berlin. He insists upon the importance of early treatment, and pointed out that, as the serum has no toxic effects, it might properly be employed in cases which were only suspected to be diphtheritic. He thought it undesirable to use massage of the part in which the injection was made, as its use was liable to be followed by some pain, and it was quite unnecessary, as the serum was very rapidly absorbed without it. The points to which he considered attention should be

directed in considering the necessity for repeated injections, were the effect upon the false membrane and the swelling of the glands, the behavior of the temperature, the condition of the urine, and the character of the pulse.

Technique of Injection.—Aronson advised me to use the asbestos and linoleum syringe holding 20 c.c. for injecting the serum. This syringe, made in accordance with these requirements, will soon be imported in this country by a leading firm. Our own instrument makers will also manufacture them after the German models so that they will soon be within reach of all. Having properly sterilized the syringe by boiling and using 0.5 per cent. trikresol, I commence by injecting 10 c.c. in mild cases, and 20 c.c. in malignant cases, by pinching a fold of skin in the intra scapular region, and allowing the serum to be slowly injected. I believe it proper, however, to have a syringe of suitable size and inject the required amount, rather than inject several places, which is scientifically incorrect, and besides tends to demoralize the patient by causing pain with each stick of the hypodermic needle. The calibre of the latter must necessarily be quite large, owing to the thickness of the serum, which is at times rather mucilaginous. It is proper to note all differences and effects on the false membrane and the swelling of the glands, the behavior of the temperature, the condition of the urine, the effect on the heart, especially the pulse.

There should be no hesitation in injecting on the second day, and, if absolutely no effect is seen, repeating the injection on the third day, as there is absolutely no risk from the injection. It is a perfectly safe remedy, and shows no immediate reaction. It differs from tuberculin and vaccine in that it causes no reaction. Therefore, a case of antitoxin treatment will show no symptoms directly attributable to the remedy, unless it be in some cases urticaria. The temperature does not fall by crisis, but by lysis, with antitoxin treatment. Massage of the serum after the injection should not be practised, according to Professor Heubner, Aronson, Baginsky, and others.

My opportunities for watching this line of treatment in Berlin last summer, and also my experience with numerous cases in this city in consultation practice, and also more recently a series of cases injected and at the time of writing still under observation, in the Municipal Hospital of Philadelphia,[1] by courtesy of Drs. Welch, Bemis, Davis, Gould, Kyle, and others, makes me emphasize the care of patients and the necessity for permitting absorption to take place without massage.

Practical Points in Treatment.—Let us not lose sight of the fact that in the use of this rather new agent, we are still treating diphtheria, and that all discharges, be they from the nose, throat, or mouth, and possibly fæces and other excrements, should be subjected to a rigid disinfection. This, if possible, before leaving the body. For this purpose local swabbing of all visible membranes with a 1 to 2,000 bichloride of mercury solution, using glass rods with some absorbent cotton—the latter to be burned immediately after swabbing; the glass rod to be put into bichloride solution. We still require most thorough naso pharyngeal antisepsis for this purpose, lukewarm, 105° to 110° F., normal table salt solution, injecting either nostril until the stream flows out of the other side, using considerable force at times. Great attention must be paid to the recumbent posture, which has been so strongly advocated in Berlin, and I was happy to hear from Dr. Campbell White, of this city, in discussing my paper on treatment of diphtheria.[2]

The usual rules of hygienic measures are in all cases more rigidly to be looked after in this serious illness than in any other class of diseases—bathing, temperature of the room, absolute cleanliness, good light (sunlight) to be admitted. The dietetic management to consist of strong supporting treatment—beef tea, broth made of veal, mutton, chicken—should be tried. Milk diet, farinaceous foods, raw scraped steak, fresh eggs, and kumyss or matzoon, sometimes buttermilk. Where we have young children I invariably find them craving for liquids, and here ice-cream is one of my most favorite articles of diet. Naturally, cautiously given.

Stimulation should be cautiously followed out. So, for example, it is wrong to commence stimulating every case from the beginning. It should be used where there is weakness of pulse and where heart's action is slowed, and then, however, if required, it should be freely administered. Good Tokay, and Baginsky advises Greek wines (Mavrodaphne) and other kinds. These latter wines, being sweet, are very greedily taken by children. Neither the ice collar nor any other form of external local application was used, in all my experience abroad or in this country, with the serotherapy.

As all the reports, therefore, from Berlin, Paris, and even America, give good results, it is safe to assume that antitoxin has stood the test of time and is the best remedy therefor used. I do not believe it to be a cure-all, but that, with careful nursing, proper attendance, and early use in the disease, it will do more good than any hitherto known treatment.

The Aronson serum in use in Berlin, London, and also some in New York, has given me better results by far than Behring's serum, although it is now claimed that Behring's serum is as strong as what Aronson recently made. In once case I used 5 c.c. of Aronson serum with the same result as 10 c.c. in another with Behring.

Finally, I desire to state, in answer to very many questions concerning the length of time that serum will keep, that it will keep in a cool place about a few months. A great many unscrupulous people, mostly pharmacists, have already commenced to offer antitoxin, and I would take occasion to warn against using any substance resembling antitoxin.

Although by cabling to Berlin three times I received a small consignment, I am assured that we may receive some in the near future, but that a general supply will be received about spring of next year.

As Paris has already, similar to Berlin, opened a general subscription list for the preparation of antitoxin, would it not be advisable to have someone brought over from Berlin capable of making antitoxin, and thus be assured of the proper technique?

No doubt sterilizing milk benefactors might possibly be induced to aid a project for the cure and extermination of one of the most fatal diseases of to-day.

187 Second Avenue.

[1] A complete report of cases will be published in the American Journal of the Medical Sciences for January, 1895.

[2] See Post-Graduate Journal for October, 1894.

A Long Term of Service.—Sir George M. Humphry, of Cambridge, England, recently handed in his resignation as senior surgeon to Addenbrook's Hospital, a post which he held for fifty two years. He received his appointment very early in his professional career, and it was that chiefly which determined his residence in Cambridge. The governors of the hospital in accepting his resignation adopted the following resolution: "That the governors resolve to place on record their grateful sense of the invaluable services he has during half a century rendered to the institution, both as a place for the relief of the suffering poor, and as an important centre of medical education; that, subject to his acceptance of the office, he be, and hereby is, appointed consulting surgeon to the hospital, and that the chairman be requested to convey this resolution to Sir George Humphry, and to express the hope of the governors that he may long be spared to give them the benefit of his counsel and assistance."

Fabrics and Odors.—Dress materials vary greatly in their capacity for retaining odors; silk allows almost all odors to pass through without leaving any smell behind; linen holds them fast; wool, though it lets many smells pass through, retains the odors of decay, like that of a corpse.

A CASE OF SARCOMA OF THE PALATE SUCCESSFULLY TREATED WITH THE TOXINES OF ERYSIPELAS.[1]

By WALTER B. JOHNSON, M.D.,
PATERSON, N. J.

T. C——, male, aged sixteen, clerk. On October 31, 1893, he was admitted to St. Joseph's Hospital, Paterson, N. J. He was born of Irish and Irish-American parents, and gives no history of any hereditary taint in the family of the father or mother. No malignant disease or syphilis has occurred in any branch of either family. His mother states that when a child she was generally healthy, except the sickness which resulted from the ordinary diseases of childhood; after which she had an affection of the eyes and an abscess of the neck, which was lanced and has left a considerable scar. Since that time she never has been ill except in childbirth; she has borne eight children, four of which died young, of convulsions or of the diseases of children. She never had any still births.

The patient has always been delicate, but has not frequently been confined to the house by illness. He had measles when seven years old, and two years ago had an attack of pleurisy which confined him to his bed for fully two weeks. He has always suffered from catarrhal trouble and hypertrophy of the tonsils, and generally during each winter has had more or less frequent attacks of acute tonsillitis; these attacks were accompanied by fever, and he has never been considered either strong or robust. Six weeks ago he commenced to complain of a soreness of his throat and accompanying difficulty of deglutition, thickness of the voice sounds on phonation, and slight dyspnœa, the respiratory function being performed almost entirely through the mouth. He had suffered so frequently from attacks of inflammatory disease of the throat, and had so strong a prejudice against medical treatment, that he refrained from making complaint and the trouble was somewhat neglected; it progressed and assumed a grave condition before any medical opinion was sought.

On examination, a diseased area was disclosed which extended over the entire soft palate, pillars of the fauces, region of the tonsils, forward over the hard palate to within one-half inch of the incisor teeth, backward and downward, involving a portion of the pharyngeal wall, base of the tongue, affecting the epiglottis, and invading the upper part of the larynx, but not extending to the true vocal cords. The infected parts were thoroughly impregnated with sarcomatous deposit, the soft palate was increased to about three times its normal thickness, the new tissue consisted of cauliflower like granulations varying in size from a rice kernel to a good sized pea; some of the masses which made up the growth were undergoing an apparently superficial ulceration and discharging a purulent secretion; others contained distended and tortuous vessels which gave them the dusky hue frequently observed in sarcomatous diseases; the uvula seemed to have been destroyed. There were several of the cervical glands involved, the largest one, however, was only about the size of a filbert.

The accompanying drawing (Fig. 1) indicates the extent of the growth and appearance about the palate and pillars of the fauces.

The patient did not present a robust appearance, although he seemed to be in fair condition; there was no cachexia. Since the present trouble developed he has been gradually losing flesh, and has become more easily exhausted on efforts at walking or running. His present weight is eighty-six pounds. He has increased difficulty in deglutition, and can only take small quantities of liquid nourishment. He is unable to breathe through his nose in consequence of the great thickening of the soft palate, which compels mouth breathing. A portion of the growth was removed for microscopical examination and submitted to my assistant, Dr. Joseph W. Williams, who subsequently reported the growth to be a spindle-celled sarcoma.

The treatment adopted was the hypodermic injection of the toxic products of erysipelas and the bacillus prodigiosus. The toxines were obtained from filtered cultures of the streptococcus erysipelatosus, and were used in combination with the toxines of the filtered cultures of the bacillus prodigiosus. The toxines were kindly supplied by Dr. William B. Coley, of New York, who also saw the case in consultation in an early stage of the disease. Some of the solutions were prepared by Dr. Alexander Lambert, Fellow in Bacteriology, College of Physicians and Surgeons of New York, and some by Mr. B. H. Buxton, recent Fellow in Bacteriology at the Loomis Laboratory, New York.

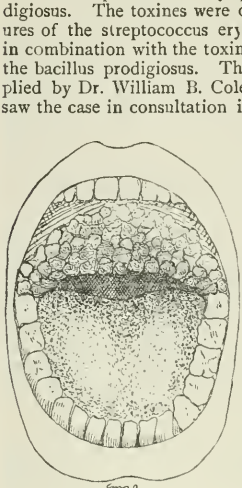

FIG. 1.

October 31st.—The injections of the toxines of erysipelas were commenced daily with fifteen minims. The dose was increased each day until it had reached sixty minims. The bacillus prodigiosus toxines were used in doses of five minims in combination after the dose had reached thirty-five minims. The injections were sometimes given in the arm and sometimes in the leg, and generally caused redness, swelling, and pain almost immediately after they were given; these symptoms were always present and persisted from twelve to thirty six hours. The temperature varied. It was elevated after each injection, to a greater or lesser degree, from 99° to 103° F. The patient always felt cold, and after some of the injections had chills, some of which were much more severe than others, and were accompanied by nausea, vomiting, and pain in the back of the head and neck. When the chills or feeling of coldness had passed away a profuse perspiration would follow, and the condition of the patient would be comemuch more comfortable.

The treatment was continued from October 31, 1893, to June, 1894, during which time it was intermitted on a number of occasions for various reasons. The patient developed, during the entire progress of the treatment, a dozen chills in all; four of them were violent, and after one, which was the most severe, his temperature rose rapidly to 103° F. This chill, which was very violent, was followed by marked cyanosis, pain in the neck and head; his pulse became very rapid and feeble, and his general condition was considered very serious. His nose and lips were subsequently affected by a severe herpetic eruption, and his physical condition was such that he was obliged to remain in bed for two weeks; during this period of time the injections were discontinued. No explanation of the severity of this attack could be given, as the toxic solutions used had been in use in the same doses from the same supply, and the same bottle which was used before, and also after, this attack without any previous or subsequent marked disturbance.

After the patient had been under treatment for five months he developed a peculiar variety of keratitis, which was so severe that the outline of the pupil or coloration of the iris could not be seen through the opacities which, although they were apparently punctate, were so closely coalesced that the entire cornea was opaque; some of the opacities are still present and visible, although their character cannot be defined. The injections were stopped for three weeks, during the most severe period of this attack.

Frequently the patient became so distressed by the sore-

[1] Read at the October meeting, Section Laryngology, New York Academy of Medicine.

ness of his body caused by the repeated injections, that an intermission of two or three days was taken, and the treatment discontinued. Also, on several occasions medication was stopped in consequence of temporary inability to procure the solutions for injection.

The result of the treatment was a constant, steady, but slow, improvement in the condition; two weeks after the injections were first given the soreness had left his throat to such an extent that he was able to swallow not only fluids, without pain, but also considerable quantities of solids. His weight increased to eighty-nine pounds. The granular masses commenced to disappear, this improvement continued, and during the period of treatment the deposit of the sarcomatous material was constantly, but very gradually, disappearing, some of the granulations by necrobosis and some by absorption. During all this time his general condition steadily improved; at the end of the fourth month of treatment his weight had increased to ninety-three pounds. The patient's temperature was generally not materially increased after the injections, except as previously noted. The improvement was slow and the progress of the recovery uneventful, although the constitutional disturbance was marked during the attacks mentioned above. The granular swellings gradually disappeared as the tumor mass decreased in size. The injections were discontinued entirely in June, since which time there has been no return of the disease; the patient is in excellent physical condition, his present weight is one hundred and seven pounds; he states that he never felt so well, and there are no annoying symptoms of any kind present at this time, now about one year since the onset of the disease.

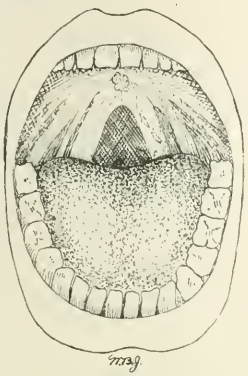

Fig. 2.

October 1, 1894.—On examination a slight central prominence and one or two spots of ulceration is all that remains of the growth; cicatrization and contraction has taken place, and white bands of adhesion extend from the hard palate to all parts of the fauces, as shown in the drawing (Fig. 2). The uvula and a small portion of the epiglottis have been destroyed by ulceration.

Jacksonville Meeting of the Tri State Medical Society.—The third annual meeting of the Tri-State Medical Society of Iowa, Illinois, and Missouri was held at Jacksonville, Ill., October 2d and 3d. The attendance was large and great interest was manifested. Papers were read by Drs. J. H. Etheridge, Bayard Holmes, Boerne Bettman, Robert H. Babcock, F. Henrotin, and W. F. Hubbard, of Chicago; John Punton, of Kansas City; James A. Close and Emory Lanphear, of St. Louis; W. B. LaForce, of Ottumwa, Ia.; E. O. Sisson and F. B. Dorsey, of Keokuk, Ia.; Frank P. Norbury, Anne H. McFarland, Carl E. Black, and L. A. Malone, of Jacksonville, Ill.; Alfred Meyer, of Kankakee, Ill.; W. M. Catto, of Decatur, Ill.; and Charles W. Rook, of Quincy, Ill. The election of officers resulted as follows: *President*, Dr. James Moore Ball, of St. Louis; *Senior Vice-President*, Dr. Bayard Holmes, of Chicago; *Junior Vice President*, Dr. L. A. Malone, of Jacksonville, Ill.; *Treasurer*, Dr. C. S. Chase, of Waterloo, Ia.; *Secretary*, Dr. Frank P. Norbury, of Jacksonville, Ill. St. Louis was selected as the next place of meeting. Time—the first Tuesday, Wednesday, and Thursday of April, 1895.

CONGENITAL ANNULAR STENOSIS OF THE VAGINA—AN IMPROVED METHOD OF OPERATING.

By HIRAM N. VINEBERG, M.D.,

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INSTRUCTOR IN GYNECOLOGY, NEW YORK POST-GRADUATE SCHOOL OF MEDICINE AND HOSPITAL; ATTENDING GYNECOLOGIST MOUNT SINAI HOSPITAL DISPENSARY, AND MONTEFIORE HOME FOR CHRONIC INVALIDS.

Acquired stenoses and atresias of the vagina are fairly common and have received considerable attention in literature; but not so the congenital stenoses of the vagina. The literature on the subject is very meagre. This, doubtless, is due, in part, to the looseness with which many authors employ the terms "atresia" and "stenosis." For instance, several authors speak of "incomplete atresia"—a solecism which should not occur in scientific medicine. Either an atresia (*ἀτρησία*, from *ἀ*, priv., and *ἀ τρησίς*, a perforation) is complete or it does not exist at all. If there be an opening or a perforation, no matter how small, it is no longer a condition of atresia but of stenosis or stricture.

The meagreness of the literature on the subject of congenital stenosis may be judged from the circumstance that, in 1890, L. Kleinwächter[2] was able to collect only twenty published cases, and in only two of these was the annular stricture situated at the junction of the middle with the upper third of the vagina. In his paper he reports two cases in which the stricture was situated in this portion of the vagina. Ostermann and Odebrecht[3] have each recently reported a similar case. A search through literature since 1890 has failed to find any other cases. These six cases, then, form the total number hitherto published. The two cases that I am about to report will bring the number up to eight. I am loath to believe, however, that the condition is as rare as these figures would indicate. Many cases, no doubt, go unobserved. They are frequently overlooked because they may give rise to no symptoms. When the conditions interfere with marital intercourse, as in one of my cases, the woman may have her attention drawn to it and seek advice. In other instances it is found accidentally, as in my first case, when the physician makes a vaginal examination for some uterine disorder having no reference to the anomaly. In another class of cases the woman may seek advice on account of sterility (Kleinwächter).[4] In a further class of cases the condition is found at labor—Doleris,[5] Murphy,[6] Hemmer,[7] G. Braun,[8] Heyder.[9] But in the latter class of cases I am of the opinion that it is frequently overlooked. For unless the accoucheur made a very careful examination he would be likely to mistake the thick ring for an undilated os. As these rings often yield to the intermittent pressure of the head and the softening processes attending labor, the true condition would not be revealed.

Case I.—A. A——, single, aged seventeen, was seen in consultation with my friend Dr. J. I. Metzger, March 19, 1893. Has had none of the diseases of childhood. At five years she had a vaginal discharge, which seemed so unnatural to her parents that they consulted a doctor about it. He made light of the matter, and it disappeared after a time. In her seventh year she had a similar discharge, and again in her twelfth year. Since then the discharge has continued about the same. In her thirteenth year she had typhoid fever, complicated by pneumonia, but made a good recovery. Apart from this she enjoyed good health until six months ago. Menstruation set in when she was fourteen years of age, and was regular and painless from the outset. For the past six months has been complaining of pain in both groins, backache, and increased vaginal discharge. Exercise,

[1] Read before the Section on Obstetrics and Gynecology of the New York Academy of Medicine, May 24, 1894.

[2] Prag. Med. Woch., 1890, pp. 589–591.

[3] Centrlbl. für Gyn., 1894, No. 5, p. 123.

[4] Loc. cit.

[5] Archives de Tocologie, 1886, No. 2, p. 135.

[6] Meissner: Frauenzimmer Krankheiten, Bd. I., p. 327.

[7] Neue Zeitschrift für Geburtskunde, Bd. IV., p. 3.

[8] Centrlbl. für Gyn., 1880, No. 7.

[9] Archiv. für Gyn., 1889, Bd. XXXVI., p. 502.

particularly walking, made the pain in the groin worse. These pains were relieved during menstruation, which continued to be regular. Health otherwise fairly good.

She is a tall, slightly built girl, with small, undeveloped mammæ. The external genitals are normal, though rather undeveloped, the pubes is thinly covered with hair. The hymen is ruptured from previous examination. The examining finger comes into contact with a membranous ring at about the upper two-thirds of the vagina. In the centre of this ring is an opening barely admitting the point of the index-finger. The ring seems to be about one centimetre in thickness, and is smooth

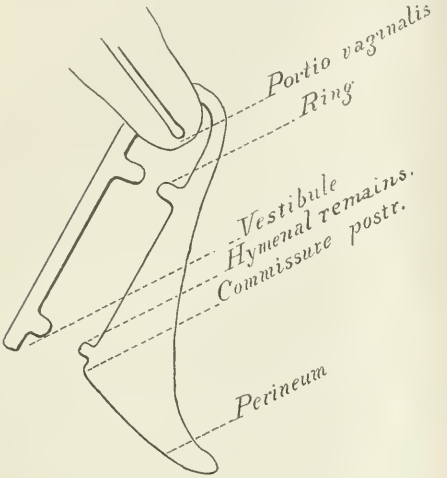

Fig. 1.

and homogeneous in structure (see Fig. 1), revealing no evidences of cicatricial tissue. With the finger in the rectum the cervix of a rather small retro-displaced uterus is felt about one inch above the stenosed part. The left ovary and tube are normal in size. From the right horn of the uterus a moderately thick cord can be felt passing to the right sacro-iliac articulation. The right ovary can be made out of normal size, but the right tube cannot be palpated.

Diagnosis.—Annular stenosis of the vagina, probably of congenital origin, retro-displacement of the uterus.

On June 15, 1893, I assisted Dr. Metzger to do the customary operation of crucial incision and forcible stretching. At the operation it was found that the vagina was quite roomy beyond the stenosis. The wound was packed with iodoform gauze and afterward kept dilated by Sims's glass plug. This part of the treatment was rather unsatisfactory, and the stricture was not very much improved by the operation.

Case II.—B. G——, aged twenty-two, was first seen by me in January, this year, in my service at the Mount Sinai Dispensary. She was married four months, and sought advice because coition was painful to her and unsatisfactory to the husband. He stated that he could enter only for a short distance, and then "something" seemed in the way. Her history was negative. She had always been healthy as a girl, and never had any vaginal discharge. Had none of the diseases of childhood, as well as she could remember. She is a well-built, fully developed woman, mammæ and external genitals normal. At the junction of the middle with the upper third of the vagina a constriction is felt, formed by a membranous ring, in the centre of which is an opening just large enough to admit the point of the index-finger. With the finger in the rectum a normal-sized uterus is felt, in anteversion, lying some distance above the constriction.

On January 22d, assisted by Drs. Rau and Brothers, I excised the ring with scissors, flush with the vagina, for about three-quarters of its circumference, taking care not to injure the rectum. I then stitched the upper and lower edges of the vaginal mucous membrane by a continuous catgut suture. Beyond the first ring the vagina was funnel-shaped, and at about the level of the cervix was a second ring, of larger calibre than the first, admitting the points of two fingers. The portio was very small and short, and the anterior lip seemed to be continuous with the second ring (see Fig. 2). I made one attempt to dilate this ring, but did not persevere in my efforts as there seemed no special indication for its removal. I

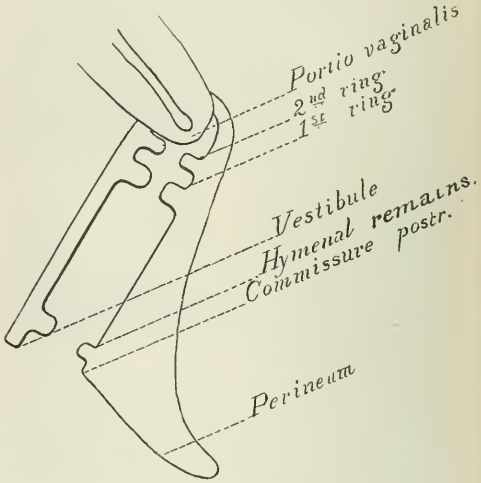

Fig. 2.

was desirous to dilate and curette the cervix, as there was some cervical catarrh, but experienced some difficulty in seizing the small cervix with the volsellum. With the aid and suggestion of Dr Rau the cervix was drawn down by catching hold of the second ring with the volsellum and making traction on it. A dilatation and curettage were then easily done. The vagina was packed lightly with iodoform gauze, which was removed in forty-eight hours. The patient was kept in bed for a week. At the end of that time the vaginal wound had healed by primary union. The vagina was now quite capacious, and the two examining fingers encountered only a small portion of the ring, which had not been excised. This now is fully obliterated. Coition ever since the operation has been satisfactory and unattended with pain to the woman.

The origin of individual cases of malformation of the vagina is always a matter of more or less doubt. It is not always easy to tell whether the pathological condition is congenital or acquired. During severe attacks of scarlatina, measles, and typhoid fever there may be an ulcerative inflammation of the vagina going on without being observed by the attendant physician. The local affection is entirely masked by the more severe and greater disease. As a result of the ulcerative process a ring-like stenosis may form, which may be smooth and homogeneous, having all the characteristics of a congenital formation. It may be well to remember, however, that in children it is usually the vulva and the region external to the introitus that are affected with inflammatory diphtheritis and ulcerative processes.[1] This view of the mode of origin of membranous stenosis of the vagina is based chiefly on what has been found to follow ulcerative processes in the vagina following labor. Some cases in multipara have been reported (Olshausen and Odebrecht[2])

[1] Henoch: Kinderkrankheiten, Auf. IV. Berlin, 1889.
[2] Centralbl. für Gyn., 1894, No. 5.

in which an annular constriction was found in the vagina, apparently showing no traces of cicatrization, and which, were it not for the prior history, might have been looked upon as of congenital origin.

Bearing all this in mind, and recognizing the difficulty in deciding in a given case whether it is congenital or acquired, I think it may be safely assumed that both of the cases reported to-night were congenital. In Case I. some doubt might arise, from the existence of a vaginal discharge at the age of five and seven years respectively. But this discharge was evidently no more severe than is frequently witnessed in young girls, and probably would not have excited the attention of the parents had it not been for its appearance at what appeared to them an unnatural age. A condition severe enough to be attended with an ulcerative process would not have been treated lightly by the doctor that had been consulted. In Case II. there seems to be no room for reasonable doubt. The patient had always been healthy as a girl, had had no severe illness, and had had no vaginal discharge. Still, the existence of a second ring, and a very small, poorly developed cervix would speak in favor of an ulcerative process. But this may have been, and no doubt was, of intra-uterine origin. In fact, Breisky [1] and others maintain that the cause of congenital vaginal stenosis is to be sought in fœtal inflammatory processes, and that they probably most often occur during the later period of intra-uterine development. On the other hand, some other observers, notably Dohrn,[2] hold that they develop in the same way as the hymen. A third theory is that they are due to anomalous development of Müller's ducts. Olshausen [3] claims that it is difficult to explain the origin of vaginal stenosis on the theory of an anomaly of development, and for this reason alone doubts their congenital origin.

The diagnosis offers but very little difficulty. The examining finger comes against a ring-like constriction in the upper part of the vagina, with an opening varying in size from a few millimetres in diameter to that which will admit the point of one or two fingers. An examination per rectum will reveal the cervix lying two or three centimetres above the constriction.

An apparent stenosis is not infrequently observed in pregnant women. It is situated in the upper part of the vagina, not far below the vault, and though the constriction may be considerable, it never offers an obstruction to labor. E. Martin already had called attention to it, and stated it was a constant occurrence in primiparæ at the sixth month of gestation (A. Martin,[4] Olshausen [5]). It is said to be produced by a pressing down of the vaginal vault, forming a duplicature of the vaginal wall.

The treatment usually adopted consists in forcibly rupturing the membranous ring, or making a crucial incision and stitching the torn or incised membrane together in the direction of the long axis of the vagina.[1] The crucial incision was the method followed in the first case, and seemed to me unsatisfactory in that it required considerable after-treatment with vaginal plugs to prevent recontraction and the immediate result was far from gratifying. It occurred to me in the second case that it would be better to excise the ring and stitch the upper and lower edges of the mucous membrane together, which I did. No after-dilatation was necessary, and the result was perfect. Union had taken place by primary intention. There was no constriction to be felt at the old site of the stenosis excepting a small portion of the ring that had been left on the anterior wall. In a similar case I would excise the whole ring, though now in my case scarcely a trace of any constriction can be detected. In fact anyone examining the patient now for the first time would find some difficulty in locating the site of the former stenosis. The late C. C. Lee, in his excellent article on Vaginal Atresias, in the "American System of Gynecology," [1] and, by the way, he also employs the paradoxical term "incomplete atresia," speaks of dissecting out the atresic bands. He followed this method in one case, but left the denuded surface to heal by granulation. "The process was slow, from the necessity of constantly maintaining effective dilatation, but by degrees it resulted in obtaining a perfectly formed vagina." In my search of the literature on the subject I find that Heyder,[2] in 1890, pursued very nearly the same course that I did. He divided the membranous ring into two by a Paquelin cautery, excised each half with the scissors, and brought the mucous membrane together by fine silk. Healing occurred in eight days. There was only a slight constriction to be felt afterward.

In cases where the stenosis is not too long, that is when its thickness is within moderate limits, excision of the constricting ring, with subsequent stitching of the upper and lower edges of the mucous membrane, forms, to my mind, the ideal method. The loss of blood may be reduced to a minimum by beginning with the continuous suture as soon as a small portion of the ring is excised, and following up the cutting with suturing. This plan I pursued in my case, and the hemorrhage was only trifling. By introducing a finger in the rectum and holding the urethra well up with a sound, there should be no danger of wounding either of these structures.

127 East Sixty-first Street.

[1] Cyclopædia of Obstetrics and Gynecology, vol. x., p. 255. William Wood & Co.

[2] Über die Entwickelung des Hymen, Schriften der Gesell. für Beförderung der gesam. Naturwissen. zu Marburg, Bd. X.

[3] Loc. cit.

[4] Centrlbl. für Gyn., 1894, No. 5, p. 125.

[5] Ibid., p. 124.

CIRCUMCISION—DANGERS OF UNCLEAN SURGERY.

By HENRY LEVIEN, M.D.,

NEW YORK.

Hebrew male children are generally circumcised on the eighth day of their birth. This operation is postponed only in case of the child's sickness, or when the babe, for some reason, is in such an enfeebled condition that it is feared the operation may prove fatal. Then it is postponed for a week or for a succession of weeks.

Circumcision is practised as a purely religious rite; the origin of its appearance is to be looked for in the sacred literature of the Jews, and as remote as the narrative of Abraham, the Hebrew, who performed the operation upon himself when ninety-nine years old; and since that time his descendants keep it up as a peculiar sacrifice which is acceptable to God. There are some allusions, in the ancient and pre-historic literature, to the effect that this operation has been performed for the sake of cleanliness. Herodotus (ii., 37) ascribes the origin of the custom to the Egyptians. The same cause is given on the authority of Philo the Jew; [3] other causes being avoidance of carbuncle, purity of heart. Sanitary reasons may have been the object in view; but this, as well as the previous considerations, are not very well accepted, for the reason that other nations of that epoch, not less intelligent than the Hebrews, have not accepted it.

Ethnographically considered, circumcision is of a Semitic origin, taken by the Hebrews most probably from the Arabs, though there are certain reasons to presume that the Egyptians were the ones whom the Hebrews imitated in this practice, the only inexplicable feature being, why do Hebrews circumcise on the eighth day, while the Arabs, Egyptians, and those small tribes practising it in the western hemisphere, perform the same on the approach of puberty.

To this short sketch we will add only that this operation was performed in ancient times, as seen in the Bible, with sharp-edged stones, and that a part of the foreskin only was removed.

How is circumcision performed at present, at the house of a Hebrew, under ordinary circumstances?

A look into the operating-room, and a short acquaint-

[1] American System of Gynecology, vol. ii., p. 27. [2] Loc. cit.

[3] Opera, ed. Maugey, ii., 210.

ance with its surroundings, as well as with the ceremony connected with the operation, I believe, will be of interest to those of my colleagues who have never witnessed it, and will probably never have the opportunity to do so. Allow me to preface the description by saying that there is no mystery connected with it, but certain peculiarities of a rather fanatic nature are adhered to, merely because it is a custom kept up for ages. As an illustration, I will mention the custom of hanging up slips of paper, written or printed, containing a psalm and some cabalistic names of some angels, designed to protect child and mother from the grasp of the devil. These slips are to be seen attached to the bed, walls, and doors of the bedroom, and remain there for about twelve weeks, the time limit for the satan to exert his demoralizing influence upon the new-born and his mother.

All religious ceremonies and prayers are best accepted by God when they are performed in the presence of at least ten adults (men, not women). When the eighth day approaches, friends are informed of the coming event, and are invited to be present at the ceremony and at the dinner following it. On this day the father attends church, where a special prayer is given and a hymn sung. In the rural districts the infant would be carried to the synagogue and there operated upon; but this is done mostly by the poor, whose apartments are too small to accommodate fifteen or twenty people. Otherwise, the father, accompanied by all his friends, goes home, where preparations are being made for the operation. The male guests find seats in the front room, which will serve as the operating-room, while the female relatives and friends crowd the bedroom, assisting to dress the baby. By "preparations" is not meant that nurses, or at least one nurse, is in attendance, preparing boiled water, sterilized towels, trays for instruments. Not at all. You see only crowded rooms, where the nearest relatives busy themselves by carrying pillows from bedroom into operating-parlor. One feels there is something remarkable going on, or something remarkable going to take place. To comfort the weary and hungry visitors the father, greatly agitated, goes from one guest to another, telling them that "he" will come soon.

By "him" is meant the chief personality of the day, the surgeon-in-chief, the Mohel. He is a busy man. The Hebrews are a prolific nation, and the surgeon performs often three or four operations in one day. But who is he? Where did he study? Why is he entrusted with the life of a human being? Nobody can tell. All we know is, that he witnessed this operation several times, and announced himself competent enough to perform the same. Generally, but not always, the surgeon is more or less conversant with the teachings of the Talmud, and especially with that part of it which treats of the anatomy of the generative organs. Lister, being born in this century, could not have imparted his ideas to the surgeons of the Talmudical era; consequently the Mohel, who receives his information on this subject from that source only, bravely goes to operate without any knowledge of asepsis and antisepsis. He has come. Fresh murmurs begin to circulate in the rooms; consultations are being held by husband and wife as to upon whom to confer certain honorary rites in handling the infant during operation. At last appointments are made. One man is to serve as the operating table (a highly honored position). This man will be seated on a high chair on pillows, and on his lap the baby will lie during operation. Next a young couple is appointed, generally a maiden and a boy; the first is to take the baby from the mother's hands and transfer it to the young man, who in his turn brings the child into the operating-room, and hands him over to the bystanders. Then the assistant surgeons are appointed. When the father reports to the Mohel that everything is ready, the latter calls the assemblage to order. The man-operating-table takes up his high position, the surgeon his place, the assistants crowding around him.

Now let us have a look into the surgeon's armamentarium. All you find is a wooden case-box, with one double edged knife in it. It is not hard to discover on the knife suspicious spots of dried-up blood, left from some previous operation or operations. I recently called the attention of the Mohel to the condition of his instrument, upon which I discovered a few bloody spots; to satisfy me he tried to rub the blood off with his finger-nails, and believed asepsis was fully attained. I was compelled to interfere and make him do what I considered proper. The operation in its primitive form, as will be seen later, is divided into four parts, each being performed by a separate individual, though improvements and modifications are being instituted.

The signal is given. The baby is on its way from the bedroom, and when it reaches at last the operating-room, the Mohel meets it with a phrase: "Blessed be he who has come!" which is repeated by all present. The baby is kept on a pillow, and in this state it is placed on the lap of the high-positioned man. The operation begins. The surgeon goes to work. There is no washing of hands, no scrubbing of finger-nails.

First part: The surgeon steps bravely forward, adjusts the baby in the right position, and baring the penis, grasps the foreskin with the thumb and forefinger of his left hand, says a prayer, and cuts it off. His work is done. He steps aside to give place to No. 2, who with the pointed nails of his thumbs tears and divides the mucous membrane covering the glans and pushes it backward to the corona. When this is done, forward steps the third party, who takes the bleeding, tender organ into his mouth, which is never cleaned before, and may be full of decayed teeth and purulent gingivitis, and sucks it three, four times, spitting the blood into a specially prepared receptacle with some special (Palestine?) sand in it. Into the same is placed the cut-off foreskin.

Fourth. The surgeon-in chief resumes his duty again, and an attempt is made to dress the wound. It consists in placing a handful of some pulverized decayed wood which is supposed to have astringent power, and covering it with some rags.

To quiet the child during and after the operation, it is customary to put a rag with some predigested food into the infant's mouth, thus preventing him from yelling too much.

Now the child is taken from the operating-table and transferred to some honorary member of the assemblage. A prayer is sung by the Mohel, while keeping a glass of wine in his right hand, and when a certain point in the hymn is reached, he wets the tip of his left-hand little finger in the wine, and saying, "Live with thy blood," he smears the lips of the infant with it. At the same time the name is officially given to the child, he concludes his prayer, drinks the wine, and the ceremony is at an end. The child is now again handed over from one to another, until it reaches the young man, who transfers it to the young lady, the last returning the baby to the anxious mother. Tables are now set in the operating-room, and the feast begins. The dangers of infection the new-born has been exposed to may be seen by the readers themselves.

The improvements in this procedure, as mentioned above, are being instituted in large cities only, where the Mohel comes in closer connection with the physician, and consist in the following modifications: The Mohel does the whole work himself, and instead of sucking with the bare lips, he employs a glass tube through which the suction process is performed. The advanced surgeon uses also a metal plate with a long and narrow hole in it, and uses it as a clamp; he pulls the foreskin through the hole, pushing meanwhile the plate toward the glans, thus protecting the last from direct injury. Again, instead of the traditional powder, plain or even iodoform gauze is used for dressing. But this additional instrument, the plate, serves very often as a new source of infection. I found on this metal piece dried up blood, and had to insist on its disinfection.

I will cite now two cases I recently came across,

which, I believe, will serve, on one hand, as an illustration of the dangers the new-born Hebrew children are exposed to; on the other hand, with the above considerations and the following facts in view, they may be treated as a friendly warning and advice to those of my colleagues who are engaged in obstetrical practice among the Hebrews, to make it their business and a matter of conscience to be present at every operation, and supervise the whole procedure.

CASE I.—I was called to see child R—— on the 30th of March. Infant, aged thirteen days, was circumcised on the 25th; child was not well since operation, but became worse on the 28th. The Mohel was then called in, who ordered an ointment which did not do any good.

Present state: Acute inflammation of the penis, erysipelatous œdema of scrotum and on pubic region. In the cervix, behind the glans, I detected a small ulcer, which was probably the nidus of infection. Temperature, 105° F.; pulse, 160; respiration, 60. Child very restless, crying as if in great pain. Every time the child would pass urine it would scream and have convulsive movements.

March 31st.—The dressing and local applications I ordered seemed to control the pain, but the erysipelatous process was not arrested, and spread farther up, reaching a point midway between the symphysis pubis and umbilicus. Slight diminution in the œdema of scrotum. Temperature and pulse not changed; respiration labored.

April 1st.—Child is reported to have had two distinct convulsions; was very restless. The abdomen very tender on palpation; slight tympanites; redness up to the umbilicus. Baby too weak to nurse; pulse hardly perceptible at the radial artery. There was certainly very little hope to save the child, and I told the parents my opinion.

April 3d.—Have seen the child at 2 P.M. The lower abdomen, penis, scrotum, and upper part of both thighs, cyanotic, just as if gangrene had set in. Child died at 4 P.M.

CASE II.—I was called by a Mohel to see a baby whom he operated upon the same day. The trouble, severe hemorrhage somewhere on the penis, which hemorrhage he could not control by any means known to him. He was very anxious, and justly considered himself responsible. On arrival I learned that the child was bleeding the whole day and had lost about three ounces of blood. It was very hard to locate the bleeding point, as the penis was wrapped up in rags, soaked in a solution of liquor ferri chloridi, and on removing the rags the whole penis appeared dark and swollen. At last I discovered the artery of the corpus cavernosum eroded and laid open at the internal layer of the prepuce. It took considerable time to secure the vessel and compress it, on account of the swelling and tenderness of the parts. Having applied an antiseptic dressing, I left, instructing the mother to call me at once if the hemorrhage recurred. When I called on the next day I found the hemorrhage stopped, the swelling less, but ulcerations of different degrees traversing the mucous layer and the glans. The erosions were caused probably either by the misapplied dressing, or while pushing the mucous membrane toward the cervix. The child recovered.

In view of the above considerations and other facts, the question presents itself: Shall the medical profession and boards of health look upon these mutilations from the hands of ignorant people indifferently, or shall we join with the State of Ohio in introducing a bill prohibiting circumcision entirely?

In attempting to solve the question we should carefully consider the *pros* and *cons* before expressing a positive opinion. I will therefore lay before the medical world some considerations for and against prohibition.

For prohibition speak partly the facts and morals of this paper, *i.e.*, injuries and even death inflicted upon the new-born; secondly, humanitarians find circumcision an act of cruelty and barbarism, especially as practised among the poorer classes of Hebrews.

Thirdly, many consider the whole procedure entirely unnecessary, and in proof of it say that hundreds of millions of people live and prosper, not being circumcised.

Against that bill the following reasonings suggest themselves:

First, circumcision is a religious rite, besides being a custom of a race for about three thousand years, and we believe that no free government has the right to intrude upon anybody's religious convictions.

Secondly, it is a recognized fact that the Jews are less, than uncircumcised nations, prone to venereal ailments, and when so affected are sooner cured than others. Phimosis and paraphimosis, due to venereal infection, is almost unknown among the Jews.

Thirdly, the operation itself, in the hands of skilful and intelligent men, is not a severe one, and children bear it well; and,

Fourth, I would hesitate to stop a process, though a depletory one, in a nation in whom the depletion for hereditary reasons may be a necessity for the well-being of the race, and may prove disastrous if this operation is denied.

There are but few men of the younger generation who have decided to do away with circumcision on their children, and we cannot draw any conclusions yet. I, for my part, would suggest to meet the question in such a way as, on the one hand, not to offend the religious sentiments of a people by passing State laws on their behalf; on the other hand, to protect the innocent young ones from maltreatment.

This could be materialized by introducing a bill prohibiting, not circumcision, but "circumcisers," from performing operations in the way they do now, and passing a law that, at each and every operation, a duly registered and practising physician shall be present, or such physician should be sent from the local board of health. The physician shall superintend the operation, and shall be the responsible party.

Certainly no good can be attained by licensing circumcisers, having them undergo a certain examination, etc. The licensed midwife furnishes us a good example of things half done. Midwives, being allowed to go on in their practice so far, will always take one step further, and a good deal of mischief to the patients under their care is the result. Circumcision is an operation requiring as much care and dexterity on the part of the surgeon as in any other surgical work, and should be performed by a competent surgeon, or at least under his direct supervision.

239 EAST BROADWAY.

The Comma Bacillus and Cholera.—A statement has appeared in more than one of our lay contemporaries of the death from Asiatic cholera of Dr. Oertel (who must not be confounded with the distinguished Munich professor), of the Hygienic Institute at Hamburg, while engaged in bacteriological investigations of specimens of infected water from the Vistula. It is said that he succeeded in making cultures of the cholera bacilli from this water, and in one account it is circumstantially related how he introduced into his mouth a minute portion of the cultures, and, although recognizing the gravity of the accident and resorting to the free use of germicides, he developed symptoms of the disease, which rapidly proved fatal. If substantiated, this sad occurrence not only adds one more to the list of fatalities among experimental investigators, but would form a verification of the value of Koch's discovery; for, although more than one experimenter has ventured to swallow these bacilli with impunity, their negative results cannot weigh against a clearly proved positive one. It is, of course, quite as likely that the disease was contracted in another way, and that the case affords another of the numerous coincidences in which medical history abounds.—*The Lancet.*

A PLEA FOR IMMEDIATE CŒLIOTOMY IN RUPTURED TUBAL PREGNANCY.[1]

By CHARLES E. NAMMACK, M.D.,

NEW YORK.

THE object of this communication is to endeavor to remove the impression existing in the minds of many medical men, that ruptured tubal pregnancy does not require immediate cœliotomy. This impression seems to be founded on the old teaching that when the sac ruptures in the early weeks of pregnancy, the escape of blood may be moderate and run the course of ordinary hæmatocele. Even so recent a book as the "American Text-Book of Surgery" says (p. 972) that when the hemorrhage is into the connective-tissue interspaces of the broad ligaments, the treatment should be purely expectant, but that intra-peritoneal hæmatocele requires abdominal incision, etc. It also gives the differential points between the two varieties of hæmatocele, but the average practitioner who waits until this differential diagnosis shall be demonstrable, will, in the average case, have waited until his patient has lost more blood than she can regain.

However doubtful and problematic the diagnosis of tubal pregnancy in its early stages and prior to rupture may be,[2] there is fortunately a very clear clinical picture presented after rupture has occurred. The marked symptoms are summed up by Joseph Price,[3] and form a group which should be promptly recognized and immediately treated by primary operation in all cases. Price's statistics show ninety-six per cent. of recoveries in personal cases operated on, as against fifty per cent. recoveries in the cases of others when treated expectantly. Duhrssen [4] reports twenty-nine cases of cœliotomy for ruptured tubal pregnancy, with three deaths—almost ninety per cent. recoveries.

It has been the writer's lot to see the consequences of delay in two cases since January, 1893. The first of these he reported in the MEDICAL RECORD of March 18, 1893, p. 348. It was a case in which the surroundings and previous history of intra-pelvic suppuration in the patient were considered by two eminent gynecologists to be sufficient reasons for postponing operation until patient could be moved to a hospital. But the hemorrhage recurred in a very few hours, operation was performed by a third consultant, when all hope had been abandoned by the patient's relatives, and she was literally snatched from the jaws of death. The second case emphasizes so clearly the lesson taught me in that first case that the recital of it may help to firmly fix in the minds of others the conviction that a woman with a ruptured tubal pregnancy should not be left until it is extirpated.

Mrs. Mary L——, thirty-five years of age, consulted me September 8, 1893, and was found to be suffering from tuberculosis of the lungs and larynx. She was treated at intervals until April, 1894, the pulmonary process not advancing beyond the stage of consolidation, and during this time her menstrual periods were regular. Her last child had been born seven years before. She went two weeks over time in April, 1894, but the desired flow finally came in response to hot foot-baths, etc. She then menstruated regularly and normally in May, June, and July, her last flow beginning July 13th. On September 3d she felt a sharp stinging pain in right groin, followed by slight show of blood. The pain yielded to recumbency and the application of a hot-water bag and the patient was up and around next day. On September 16th she lifted a basket of coal from the elevator and immediately the pain recurred, she became nauseated and faint, and had another slight bloody vaginal discharge. The pain after this being persistent, and the weakness and fainting attacks progressive, she sent for me September 21st, and, pending my arrival, called in a neighboring physician, who told her he suspected tubal pregnancy. The evidences of rupture and internal hemorrhage were plain at the time of my visit. Surgical assistance was at once summoned, and upon the arrival of the operating surgeons a consultation was held. My opinion that an immediate operation was demanded was overruled, the other men being unanimous in the belief that the hemorrhage was limited to the layers of the broad ligament, and, therefore, extra-peritoneal, and that nature would be competent to absorb it, or that, at least, expectant treatment was justifiable. The next morning that patient went into collapse from recurrence of the concealed hemorrhage, and there was no longer any difference of opinion as to the proper procedure. Preparations for immediate operation were hastily made, chloroform being chosen as the anæsthetic on account of patient's pulmonary condition, and because vomiting had become a prominent symptom. Abdominal incision revealed a quantity of loose clots and fluid blood, estimated by the operator at three quarts, and a ruptured tubal pregnancy with the fœtus protruding. The ovum was developed so close to the uterus that the extirpation was difficult and tedious, and the patient's pulse stopped when it was finished. She rallied under inhalations of amyl nitrite and the hypodermatic use of strychnia and brandy, with injections of hot salt solution into the cellular tissues and rectum. During these procedures, the operator flushed the abdominal cavity, clamped the cut end of the tube at the uterine junction, and packed with iodoform gauze without waiting to suture the tissues. The patient was then put to bed, collapsed from hemorrhage. Despite all efforts and efficient nursing, she never rallied, and died fifty-two hours after operation. What the result would have been under operation twenty hours earlier cannot be positively stated, but there is no doubt that a recognition of, and prompt operation for, her condition on September 3d, when the first symptom appeared, would have saved her life.

And now a word as to the different indications for treatment, depending on whether the rupture is intra-peritoneal or extra-peritoneal. According to the "American Text-Book of Gynecology," p. 541, "the safest rule is to prepare at once for operation," if intra-peritoneal rupture has occurred, but if the hematoma is extra-peritoneal, "the treatment is usually non-operative," p. 542.

This leaves the patient exposed to the fourfold dangers of 1, recurrent hemorrhage; 2, peritonitis; 3, septicæmia; 4, subsequent trouble in the damaged tube. While not denying the possibility that a pelvic hematoma may remain extra-peritoneal until it is absorbed, the writer considers that the probability of recurrent hemorrhages causing it to burst into the peritoneal cavity is so great as to make primary operation the only safe procedure. On this point Joseph Price [1] speaks with no uncertain sound when he says: "With an experience of eighty-three sections for ectoptic pregnancy, I remain in surgical ignorance of extra-peritoneal hæmatocele, not a single case did I encounter." Mundé's experience with twelve cases of ectopic pregnancy [2] form an interesting study and show the value of prompt operation.

29 EAST TWENTY-FOURTH STREET.

[1] Read before the New York Academy of Medicine, Section on Obstetrics and Gynecology, October 25, 1894.
[2] J. M. Baldy: MEDICAL RECORD, September 21, 1889, p. 310.
[3] Medical and Surgical Reporter, September 30, 1893.
[4] American Journal of the Medical Sciences, May, 1894, p. 601.

A Census of Medical Men in Alsace-Lorraine shows that there were in those provinces in the first of this year 619 physicians, 10 diplomaed dentists, 123 veterinary physicians, and 230 pharmacists. Of the physicians there were 529 with German, and 90 with French diplomas.

A Cure for Dyspepsia.—A minister in Ohio was deposed some months ago on account of immorality. He admitted the charge of having had irregular relations with some of the women of his flock, but defended himself on the plea that his physician had recommended it as a cure for dyspepsia.

[1] Medical and Surgical Reporter, September 30, 1893, p. 509.
[2] American Journal of Obstetrics, vol. xxix., No. 5, 1894.

Progress of Medical Science.

Cardiac Syphilis and Angina Pectoris.—At the Berlin Medical Society Dr. A. Fraenkel recently demonstrated a specimen of cardiac syphilis from a woman, thirty-six years of age. When first seen last year, she had aortic regurgitation and suffered from frequent headaches, which were occasionally associated with fainting attacks. The heart disease was supposed to be consequent on acute rheumatism. The husband was syphilitic, and the woman herself had suffered from swellings on the head, which had ulcerated and left scars. She improved at first and left the hospital, but was readmitted this year with severe attacks of angina pectoris, in one of which she died. At the necropsy the left coronary artery was found quite permeable, but the orifice of the right coronary was completely obliterated by a process of arterio sclerosis (much in excess of the patient's years), and its proper position could only be determined by probing backward along the lumen of the artery. There was a gummatous tumor, 4½ ctm. long, in the septum ventriculorum, and Fraenkel thinks this shows that the arterial changes were really of syphilitic nature. The arterio-sclerotic changes in the aorta reached down to the bifurcation. Fraenkel, moreover, remarks on the part played by syphilis in the etiology of aneurisms. Walsh thought that sixty per cent. of true aneurisms were due to syphilis, others think still more. Fraenkel himself, during the last four years, has seen 19 cases of aneurism of the thoracic aorta in which there were necropsies; 3 cases were in women, 16 in men. Of the 19 patients, 9, that is, forty-seven per cent., had had syphilis, and these were all under fifty years of age. The case illustrates the relation of precocious arterio-sclerosis and syphilis.—*Berliner klinische Wochenschrift.*

Pancreatic Colic.—Dr. Minnich has observed a case of this kind in a man sixty-eight years of age. At the age of forty he became troubled with attacks of colic which were attended with jaundice, and continued during a period of three months, but disappeared upon treatment. In the stools were found typical biliary calculi. There then followed a period of freedom from attacks for ten years and a half, when attacks of colic recurred. These again yielded to suitable treatment. Seventeen years later the man was suddenly awakened at night by an attack of colic resembling previous attacks. A second attack took place on the next day, and a third several months later. At this time there appeared a sense of oppression in the epigastrium, together with loss of appetite and distaste for fluids. This condition persisted for about a month, without the occurrence of an actual attack of colic. At the end of this time the man was seized with diarrhœa, lasting for three days, and ending with an attack of colicky pain, referred to the left hypochondrium and to the epigastrium. The patient was well nourished, and presented no œdema. The scleræ were a little yellowish and the skin dry and of normal warmth, but not icteric, although the seat of annoying itching and a chronic desquamative eczema upon the exterior surfaces of the arms. The temporal arteries were slightly tortuous, but there was no other evidence of arterio-sclerosis. There was an absence of abdominal tenderness, so that deep palpation could be practised, but without yielding positive information. The liver was not enlarged, and the gall-bladder could not be appreciated. The spleen was likewise not palpable, and the area of splenic percussion-dulness was not increased. There was no evidence of dilatation of the stomach, and a peritoneal effusion could not be detected. The patient described the paroxysm as beginning with a sense of dull, heavy, constricting pain above the epigastrium and in the left hypochondrium, increasing in intensity and localizing itself deeply in at one point below the left costal margin, just within the mammillary line. At the height of the attack the pain extended from this point circularly to the vertebral column in the course of the costal arch, thence radiating beneath the left scapula. At the termination of the attack pain was still perceptible at the point below the costal margin, in an area about an inch and a half in diameter. Careful exploration of this region failed to disclose any morbid condition, excepting slight tenderness. The attack abruptly came to an end at the expiration of two hours, and was followed by a sense of hunger. The urine passed at this time was free from albumin and sugar, and did not respond to tests for biliary coloring matter. From this time the attacks were repeated almost daily, usually setting in toward the end of the day and lasting from a fraction of an hour to several hours. The condition resisted the ordinary treatment for hepatic colic. An examination of the stools failed to disclose the presence of fat or fatty crystals, or biliary calculi. On several occasions, however, light-gray, round calculi were found, which could be crushed between the fingers, and microscopically proved to be constituted of amorphous matter. They dissolved in chloroform, leaving a turbid solution. They fused in the flame, giving off a dense vapor having an aromatic odor. The residue yielded the reactions of calcium carbonate and calcium phosphate. Subsequent attacks of pain occurred, but no more calculi or other abnormal matter was found in the intestinal evacuations. The condition was regarded as one of calculous formation resulting in obstruction of the excretory ducts of the pancreas, and giving rise to attacks of colic. The subsequent history of the patient is not given, however, and the diagnosis therefore lacks confirmation.—*Berliner klinische Wochenschrift.*

Valerianate of Amyl.—Dr. Blanc describes valerianate of amyl, which is the odoriferous principle of the apple, that is, the essence extracted by distillation together with alcohol. Cider has long been believed by the laity to have some effect on calculous formations, and this seems to be borne out by the fact that valerianate of amyl really has some solvent action on cholesterin. It is a colorless liquid, of pleasant taste when taken in small quantities, and can be prepared in the laboratory by the action of valerianic acid on amyl alcohol; 1 grain of cholesterin is dissolved by 4½ grains of valerianate at 37° C. and by 3 grains at 40° C. (*British Medical Journal*). Physiologically the action resembles that of ether, but the special qualities lie in its being a stimulant and sedative to the liver in cases of hepatic colic. It not only immediately subdues the attack, but it prevents recurrences. If the stomach is irritable, it may be necessary first to employ sulphuric ether, following this with two to three capsules of fifteen centigrammes each, given every half-hour until the crisis is past, and continued at longer intervals during the following days. In nephritic colic the drug acts as an antispasmodic and general stimulant only, but no effect is produced on the renal calculi. Muscular rheumatism is frequently relieved, and much benefit is also derived from its use during menstrual uterine contractions. As a sedative, it is of value in hysterical manifestations. Its toxic properties being very slight, as many as five to six capsules can be taken daily, but it is necessary to guard against gastric disturbance.

Syphilis and Aphasia.—Dr. Jolly reported at the Congress of German Physicians, Vienna, a case of cerebral syphilis in which he was able to demonstrate by autopsy the dependency of word deafness and aphasia on a complete destruction of the entire parietal lobe, the two first temporal lobes, the angular gyrus, præcuneus and cuneus. The patient was unable to read his own name, to write from dictation. The word deafness Jolly considers was due to the lesion in the temporal lobe, and the loss of speech possibly to the entire destruction of the auditory centre and areas.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE CHANNELS OF INFECTION IN TUBERCULOSIS.

THE subject of tuberculosis is to-day the gravest one with which the physician has to deal, and the necessity of lowering its frightful mortality by preventing it, rather than by treatment, was never more keenly appreciated.

Although the general principles of infection have been well worked out, the channels of infection is a subject that pathologists are not entirely agreed upon. Dr. Sims Woodhead has recently made a communication in *The Lancet* which has contributed much to our enlightenment. He concedes that the tuberculous virus may be directly inoculated into the tissues, but this condition is comparatively very rare. Heredity, to which has been attributed such an important rôle in the past, plays an altogether unimportant part in the spread of tuberculosis, ranking only with such factors as insufficient and imperfect food, and defective hygienic conditions.

Tuberculosis attacks the lungs and alimentary canal by preference, because it is here that the bacillus most easily finds the moist mucous membrane with defective epithelial covering for which it has a special predilection. When the tubercle bacillus is carried into the alimentary canal by the saliva, by food-stuffs, etc., it is rendered innocuous in more ways than one; but perhaps the most effectual way is by its being taken into the substance of lymphocytes, which make their way out and in from the lymphoid patches, and which have the power of taking into their substance the tubercle bacilli. These lymphocytes return with their evil burden to the lymph-glands, and the glands assist in the complete destruction of the bacilli. This is the performance that is continually going on, and as the result infection, local and systemic, is prevented. If, however, the lymphoid patches be devoid of epithelium, or if the tissues be so weakened that their power of resistance can be readily overcome by comparatively few micro-organisms, then infection will probably follow. Masses of adenoid tissue, whatever their situation, if the cells are active, are means of protection, in so far as they consist of an enormous number of active cells which are capable of taking up large numbers of micro-organisms.

Masses of adenoid tissue are found at the entrance of the two great avenues through which the tubercle bacillus most commonly seeks entrance to the system, viz., the alimentary and respiratory. In certain animals and in man there is a ring of lymphoid tissue surrounding the entrance to the larynx, and a similar ring surrounding the entrance to the œsophagus. In the pharyngeal tonsil we have simply an enormous local development at the two poles of the latter ring. So long as these tonsils, with their accessory lymphoid tissue forming the protective ring for the pharynx, remain healthy, or so long as they are not attacked by an extraordinary number of micro-organisms, they are capable of resisting attack, and of dealing with micro-organisms even of what would be called a most virulent type.

When the lymphoid tissue is diseased, then it may serve as the locus of infection. The lymphoid cell returning with its burden of a tubercle bacillus, is taken into the tonsil or the adenoid tissue in that vicinity, where, under healthy conditions, it is destroyed or disintegrated. In its depraved state it cannot destroy the bacillus, but, on the contrary, the bacillus liquefies the lymphoid cell, the protoplasm of which then serves as a nutrient medium for the bacilli. This infection does not take place in the tonsil so frequently as in the glands which lie beyond the tonsil, and which the leucocytes include in their itinerary when returning to the circulation.

In cases where there is no distinct lesion in the tonsil itself, it must be held that the leucocytes, although able to take the bacilli into their substance, have not been able to kill them, and then they carry the bacilli to the gland in its immediate neighborhood, where they succumb, and infection takes place at this point. A multiplication and reinforcement of the bacilli by their progeny at this point, will carry the infection farther, with the result that a chain of lymphatics and lymph-glands has ultimately become affected.

In many of these cases the process can be traced from the glands in the tonsil down into the neck, and so on to the thorax, by the mediastinal and post-sternal glands and by the intercostal lymphatics and glands.

What has been stated concerning the lymphoid tissue of the tonsils and surrounding cervical glands, might be repeated almost *verbatim* for the lymphoid patches of the intestine and mesenteric glands.

The very cells, then, which in health have to do with the destruction of bacilli, and with protecting the organism against their invasion, are those which appear to be immediately responsible for the conveyance of tubercle bacilli from the outer surface to the tissues beneath.

The rôle played by the tonsil and the surrounding lymphoid tissue is, therefore, seen to be a very important one in preventing or facilitating infection in tuberculosis. An important lesson to be learned from this is, that tonsil has an important function to perform in the economy, that endeavors directed toward keeping it in a physiological condition, militate against the dangers of tuberculous and other infection, and that its removal other than for disease which might predispose it to infection, is hazardous.

Scarcity of Doctors in the Chinese Army and Navy.—The horrors of war now going on between China and Japan appear to be greatly accentuated by an almost inhuman lack of medical men on the Chinese side. From a letter of Captain M'Giffen, Commander of the Chinese war-ship Chen Yûen, we learn that there are only two Chinese doctors to twenty ships and an army of over 300,000 men.

SMALL-POX FROM CRADLE TO COUNTER.

The fourteen victims of small pox who sailed up the East River on Monday morning last, *en route* for North Brothers Island, furnish a most instructive object-lesson. In the first place, the number was considered unusually large for this city to furnish at one time, indicating that the disease is becoming rare as compared with former periods. Secondly, the subjects all came from a very circumscribed quarter of the city's area; and thirdly, they had all contracted the disease from the same source: a sick baby in the rear of a grocery shop, the mother going from cradle to counter, waiting upon the customer and then upon the child again, until she had sent out the germs to the whole neighborhood along with their purchases of tea and sugar.

A NEW DEPARTURE IN MEDICAL JURISPRUDENCE.

The *American Journal of Insanity* for October publishes three articles by eminent alienists all bearing on the topic which heads this editorial. The departure referred to was connected with the trial of a man named Schneider, a resident of Washington, D. C., who murdered his wife and brother-in-law in January, 1892. He was tried in March of the same year, and condemned to death, no plea of insanity having been put in at the time. The decision was confirmed by a Court of Appeal. In the following fall, a stay of proceedings was granted on the ground of alleged insanity. In January, 1893, the Supreme Court of the District of Columbia, consisting of Chief Justice Bingham and Justices Hagner and Cox, ordered that a commission of experts, consisting of Dr. Allan McLane Hamilton, Dr. John B. Chapin, and Dr. Charles L. Dana, be constituted, with power to examine the prisoner and also employees and officials of the jail in which he was confined. Counsel for the prisoner was also permitted to secure the services of three experts with authority to make special examinations. After the investigation by the experts had been finished the case was tried before the full bench, but without a jury. The prisoner's counsel brought forward his witnesses, including his medical experts. The examination of these latter gentlemen was made for the most part by the experts appointed by the court. The prosecuting attorney then presented his evidence in favor of the prisoner's sanity. The whole proceedings lasted over a week. At the end the Commission appointed by the court made a report in which they unanimously reached the conclusion that the prisoner was not insane. The judges, basing their opinion upon the evidence given at the trial and upon the report made by the Commission, found the prisoner sane and he was executed.

The comments upon this new mode of judicial procedure are made by Dr. John B. Chapin, Superintendent of the Pennsylvania Hospital for the Insane, who was one of the Commission, and by Drs. W. W. Godding and E. N. Brush, who were both experts for the defence. These gentlemen all speak, on the whole, favorably of the method. It is suggested that there was no need in such a procedure for the appointment of experts for the defence, and also that there should be opportunity for the prisoner to appeal from the decision of the Commission if it was unfavorable to him.

Dr. Brush says: "I think I voice the sentiments of all my associates called as experts by the counsel, by the prisoner, that never has it been our experience to have a more fair, considerate, and, touching the case at hand, more intelligent examination than in this case. . . . The examination was undertaken in a dignified manner, and attracted the closest attention of the court. It was undertaken, not with the intention of producing contradictions, or of surprising the witnesses into making faulty or questionable admissions, but to get at the facts of the case and the processes by which the witnesses reached their conclusions. In these respects the inquiry was satisfactory and admirable."

The new departure in medical jurisprudence is one which reflects credit upon the Supreme Court of Washington. While it may need some modifications it is one which deserves the attention of those who desire to see justice secured in difficult medico-legal cases.

READING NOTICES IN MEDICAL JOURNALS.

In these times of intense commercial activity it is not strange that, even the most reputable and high toned chemists and manufacturers of pharmaceutical preparations should seek every legitimate means of commending their products to the medical profession, who are their chief customers. The time has been, and past, when the leading dailies and monthlies of this country did not hesitate to insert in their papers editorial commendations of articles advertised in their columns. It may probably be said with absolute correctness, that none of these at the present time insert anything of this sort without having appended to it in italics the abbreviation "Adv." It seems to us that it is particularly incumbent upon the editor of a medical journal, that he should keep his pages so clear from any suspicion even of anything which would appear to be in the interest of those who advertise in it, that his subscribers may feel the most implicit confidence in his desire to supply them only with that which is distinctly in their interest. It is no doubt a fact that oftentimes preparations advertised by first-class houses are worthy of high commendation, but if once it is found that an advertisement is the means of obtaining directly, or indirectly, editorial notice in any medical journal, the confidence of the patrons of such a journal in its disinterested presentation of scientific facts must surely be more or less weakened. No editor is in a position to speak well of one, and not of another. The only safe course, the only possible course, is to adhere to an inflexible rule, to admit no article and to print no editorial which either favors or condemns the wares of any advertiser. With all the care which is exercised to prevent the insertion of articles which even accidentally commend or condemn, sometimes by inference only, goods advertised in the pages of this journal, articles sometimes creep in which violate this rule, and give not only a great amount of trouble, but have again and again caused the loss of thousands of dollars by the withdrawal of advertisements which were being paid to us by first-class advertisers, responsible houses, worthy the trust and confidence of the profession.

Holding these views as to the proper conduct of a medical journal, we notice with regret that one of our esteemed contemporaries has recently published, not only an article highly commending the product of a house ad-

vertising in their pages—with which house or product we have no controversy whatever—but it has also, most strangely, commented favorably in an editorial upon the same article. We have no doubt that this is eminently satisfactory to the advertisers, but cannot believe that it will increase the respect to which the usual conduct of this journal entitles it.

The true value of any journal to an advertiser is not only the extent of its circulation and the character and standing of its subscribers, but equally, if not more so, the estimation in which a journal is held for absolute impartiality and fairness toward all, and its single eye to the interests of its subscribers.

THE DANGERS OF BUTTER AND BREAD.

A short time ago we called attention to the investigations of certain Swiss and Italian bacteriologists, who showed that the butter of the markets was not sterile, and might contain pathogenic organisms. Now it appears that bread is not sterilized by baking, and takes its place with butter as a possible germ-carrying food. It would be sad indeed to find that the staff of life was really a staff of death, and that the very fundamentals of plain and happy living, bread and butter and kisses, were really things of evil, except under conditions of perfect asepsis.

Drs. F. J. Waldo and David Walsh (*The Lancet*) have made cultivations from sixty-two loaves of bread taken from various bake-houses in London. Someone of thirteen kinds of bacteria were found alive in all these loaves. Here is the appalling list:

Bacteria (or their Spores) found in a Living Condition in Freshly Baked Loaves of Bread: Bacillus subtilis, Variety 1 (hay bacillus); bacillus subtilis, Variety 2 (hay bacillus); bacillus subtilis, Variety 3 (hay bacillus); sarcina (*a*), large; sarcina (*b*), smaller than (*a*); bacillus A (large, thick, rounded ends); bacillus B (large, thick, smaller than A); bacillus C (small, copious spore formation); bacillus D (smaller still, some spore formation); bacillus E (bacillus figurans); micrococcus A (small white colonies); micrococcus B (rosaceus (?), accidental); staphylococcus (very regular, larger than staphylococcus aureus).

From a number of experiments made on loaves baked in a small laboratory oven, it was found that: 1. The average maximum temperature in the middle of an ordinary quartern loaf during baking, varies from 163.4° to 186.8 F., and in small loaves from 186.8° to 203° F. 2. There is a steady increase of temperature in the centre of any loaf during baking; thus, in a quartern loaf during one hour it rises from 25° to 75° C., and in a half-quartern loaf from 25° to 88° C. during the same time. For the first forty minutes the maximum temperature is probably not more than 48° or 50° C. The practical inference is that any organisms that might be present in the centre of a loaf would be exposed for a short time only during baking to a maximum temperature of 73° to 86° C. (163.4° to 186.8° F.) in a quartern, and of 86° to 95° C. (186.8° to 203° F.) in a half-quartern loaf.

It is known that most bacteria are not destroyed by an exposure to the temperatures above mentioned as the average for the centre of a loaf during baking. The death-point of bacteria has been generally expressed by Koch and Wolfhügel in the following passage: 1. Sporeless bacteria are destroyed in one and a half hour by hot air at a temperature slightly exceeding 100° C. (212° F.). 2. Spores of fungi require one and a half hour at 110° to 115° C. (230° to 239° F.). Spores of bacilli require three hours at 140° C. (252° F.). It should be noted that these statements apply to dry heat only. In the middle of the loaf there is presumably moist heat, which is, of course, more destructive to organisms, and on that account we must make a considerable reduction in the figures of Koch when we apply them to fungi and their spores inside a loaf.

The authors draw this significant conclusion:

We see no particular reason why the origin of many mysterious septic invasions of the human body may not eventually be traced to the agency of bread. A generation ago milk was not suspected of being the means of spreading disease, and a similar observation applies to water. At any rate, the subject dealt with in this paper seems to us to be well worthy the attention of all who are interested in the scientific developments of preventive medicine, no less than in the protection of the public that consumes the bread.

No specific remedy is suggested by the writers, except that bake-houses and bakers should be kept clean, and that the whole process of bread-making be placed under sanitary control.

BERI-BERI IN NEW JERSEY.

It is not often we are called upon to announce the presence of beri-beri in or about New York. On several occasions, however, during the past few years, one or more cases have been discovered among the crews of incoming vessels. It is on this account, and especially because of the very fatal nature of the disease, that interest is awakened just now in the ill-favored human cargo of a vessel from Navassa, which has entered port at Perth Amboy. Four had died during the trip, several have since succumbed, and ten or more are ill. There seems to be no doubt that faulty hygiene and lack of suitable food were the factors determining the outbreak. Beans furnished the principal food, it appears, during the two weeks' voyage, and, strange as it may seem, this is just the article of diet which Dr. Simmons recommended in a monograph on the subject in 1880.

One of the chief symptoms is a condition of pronounced feebleness, and it is this which gives the name, made emphatic by repetition. Other symptoms, according to Aitken, are: "Anæmia, culminating in acute œdema, and marked by stiffness of the limbs, numbness, and sometimes paralysis of the lower extremities; oppressed breathing; a swollen and bloated countenance." The urine is secreted in diminished quantities, the œdema is general, and effusion of serum into the serous cavities often occurs. Muscular spasms accompany the acute dropsy. Some of the older authors have supposed the epidemic affection to be confined to Japan, while others have looked upon it as a disease peculiar to Malabar and Ceylon.

Such instances as the present would tend to show that misery and privation go far to determine an outbreak in any quarter, though the chief endemic centres are in China, Japan, and India. In 1886 a vessel arrived in

New York from Hong Kong, with twelve out of the crew of eighteen affected with what was supposed at the time to be beri-beri. Several died, including the captain. The food and water were in this instance found to have been far from wholesome.

Recent studies would indicate that the nature of the disease is a multiple neuritis, and not being contagious, there seems no fear that it will spread beyond the unfortunates who, in returning home from a life of hardship, were subjected to most unfavorable conditions.

THE "INEXCUSABLE ATROCITIES" OF SPORT.

THE President of the Society for the Prevention of Cruelty to Animals says:

"It is an inexcusable atrocity to subject any animal to pain which can be prevented by a conscientious use of anæsthetics."

It might be supposed that the gentleman was attacking hunters and sportsmen generally, who are committing these inexcusable atrocities every day. As a matter of fact the writer, while swallowing the camel of sport is straining at the gnat of vivisection. There are said to be over one hundred thousand men and boys in this country who go out with guns. They mutilate and half-kill birds, they maim the rabbits, deer, and other animals, subjecting them to exquisite pains before they die; they chase deer into the water and murder them in their helplessness, they ride after frightened foxes and drive them to a death of agonizing exhaustion; they hook up fish by the sensitive mucous membrane of the mouth and tear them from their wounds, all for sport.

There are, perhaps, half a dozen places in this country where vivisection is done on anæsthetized guinea-pigs, rabbits, and occasionally dogs.

Why doesn't the sensitive anti-vivisectionist attack the sportsman? Is it because he is afraid, or because he is a sportsman himself?

News of the Week.

Motormen and Conductors.—In St. Louis men seeking employment on the rapid-transit street-cars are obliged to submit to an examination of their eyes by a competent ophthalmologist. This is done by the street railway companies for their own protection, and is a plan that should be pursued by every street railway company.

A Medical College Burned.—On November 3d the Indiana Medical College at Indianapolis was burned to the ground.

The Horace Wells Anniversary Celebration.—The following circular has been issued: Members are doubtless aware of the action of the American Dental Association at its recent meeting, held at Old Point Comfort, Va., with reference to holding a national celebration of the fiftieth anniversary of the discovery of the anæsthetic properties of nitrous oxide by Dr. Horace Wells. The Committee, by vote of the American Dental Association, was instructed to secure two papers to be read at the celebration. One upon the "History of Anæsthesia," by Professor Thomas Fillebrown, of Boston; and one on the "Benefits of Anæsthesia to Mankind," by Professor James E. Garretson, of Philadelphia. The Committee was further instructed to arrange for a banquet to follow the meeting, at which distinguished speakers shall make appropriate addresses; to prepare a full report of the celebration, including the papers and addresses, to be printed and issued as a permanent souvenir of the occasion. Arrangements have been completed to the extent of securing favorable responses from the essayists named, whose papers are now in course of preparation. The banquet arrangements are also largely completed. To cover the expenses attending the celebration, the fee for admission to the banquet has been placed at $6. It is necessary that the Committee shall have ample notice of the number who will be in attendance, in order that places may be provided for all who may desire to attend. Subscriptions will be invited later for the souvenir volume, at a price sufficient to cover the cost of publication. The celebration will be held in Philadelphia, in Association Hall, Fifteenth and Chestnut Streets, on Tuesday, December 11, 1894, at 2 P.M., and the banquet at the Union League, at 6.30, same evening. You are cordially invited to participate in this event, which should enlist the enthusiastic support of every member of our profession. To that end you are requested to send your check and notify the Chairman of the Anæsthesia Committee, at the earliest date possible, in order that an official invitation may be sent to you. It will be proposed at the meeting that subscriptions be invited for a permanent memorial, to take such shape as the meeting shall decide. —J. D. THOMAS, Chairman, 912 Walnut Street, Philadelphia.

Medical Congress of Mexico.—The second biennial Medical Congress of Mexico was held November 5th to 8th, at San Luis Potosi. Dr. Eduardo Liceaga was President; and Dr. Luis Ruiz, Secretary, both of the city of Mexico; Dr. Jesus E. Monjaras was Chairman of the Local Committee of Arrangements, San Luis Potosi, Mexico.

Medical Society of the State of New York.—The following Business Committee has been appointed by the President of the Medical Society of the State of New York: Dr. W. C. Phillips, of New York City; Dr. H. L. Elsner, of Syracuse; Dr. H. DeV. Pratt, of Elmira.

Medical Announcements in the Press.—A New Orleans physician sends the following inquiries to the *Journal of the American Medical Association*: "Please inform me if there is anything in the Code of Ethics to prevent a practitioner: 1, From announcing in the daily newspapers that his practice is limited to the diseases of special organs; 2, ditto in the medical papers; 3, from announcing, in sealed circular letters to the medical profession at large, that his practice, etc.; 4, ditto to laymen at large, etc."

To which the editor replies: "Article I., Section 4: Duties of physicians to each other and to the profession at large: It is derogatory to the dignity of the profession to resort to public advertisements, etc. 2. While in some parts of the country physicians do publish cards in medical papers, it is not regarded as wanting in the true dignity of a physician, but as a question of taste. 3. Certainly, there can be no objection to a sealed circular to the profession, announcing that practice is limited, etc. But we find that when a physician is limiting

work to a specialty, it soon becomes known to the profession of his town, and by his papers on that subject in the medical journals he soon attracts a *clientèle*. 4. A circular to laymen cannot fail to produce in the minds of those who receive it, a doubt as to the ability of the one sending it.

"A large acquaintance with the profession in all parts of the country causes us to believe that the dignified earnest practitioner can acquire a practice without resorting to any of these plans."

And we would add that no physician should do any of these things, except that in smaller towns it seems to be a harmless practice to place a simple card announcement in the local paper.

Alma Mater, A Sonnet by Oliver Wendell Holmes.—The following sonnet, hitherto unpublished, was sent to the *Boston Medical and Surgical Journal* by Dr. H. P. Bowditch, with the statement that the poem was written at the request of Dr. Bowditch, and read by him before the Harvard Club of New York:

"Yes, home is sweet! and yet we needs must sigh,
Restless until our longing souls have found
Some realm beyond the fireside's narrow bound
Where slippered ease and sleepy comfort lie,—
Some fair ideal form that cannot die,
By age dismantled and by change uncrowned,
Else life creeps circling in the self-same round,
And the low ceiling hides the lofty sky.
Ah, then to thee our truant hearts return,
Dear Mother, Alma, Casta,—spotless, kind!
Thy sacred walls a larger home we find,
And still for thee thy wandering children yearn,
While with undying fires thine altars burn
Where all our holiest memories rest enshrined."

Our Medical Students.—England has but 552 medical students; there are 8,000 in the Germany universities, but the United States has 13,000. We could loan England a few thousand and have plenty to spare.

Care of Epileptics and Insane in Minnesota.—The board of physicians appointed by the Governor of Minnesota to investigate the insane hospitals and report on the needs of the insane, have suggested in their report the establishment of an institution for the care of epileptics, and another State insane hospital, the latter to be in the vicinity of St. Paul and Minneapolis.

Association of Southern Hospitals for the Insane.—An association has been formed with the above name, and will hold its first meeting at Birmingham, Ala., on November 20, 1894.

The Temperance Reform League of Massachusetts and the Keeley Cure.—Dr. B. D. Evans, the Medical Director of the New Jersey State Hospital for the Insane, has been admitted to membership in the Temperance Reform League of Massachusetts. This ends a battle between Dr. Evans and the Keeley cure, as far as Massachusetts can decide it, with victory in favor of the former. Dr. Evans, it will be remembered, gathered statistics from insane asylums over the United States and among the one thousand insane patients in the hospital of which he has charge, compiling valuable and detailed "tables of cases of relapse, suicide, mania, and dementia subsequent to the graduation at the Keeley Institute." His article, which was published in the *Medical News*, of May 6, 1893, was reprinted in Boston papers, and his report was laid before the Temperance Reform League. It was bitterly denounced by the "Keeley Cure," which applied to the Temperance Reform League for an examination, for this organization by its charter from the State is a quasi court, whose functions are those of a judge who examines conflicting medical evidence in a suit for malpractice and announces the result. The end of the trial has been reached, and Dr. Evans is honorably welcomed into the society, and thanked for his services in exposing pseudo-reform, while the Keeley offices in Boston have been abandoned.

Randall's Island Hospital, New York.—Dr. Samuel E. Milliken has been appointed surgeon to Randall's Island Hospitals.

No Doctors' Quarrel Over the Czar.—The daily papers have tried very hard to make out a quarrel between the attending physicians of the Czar. As a matter of fact there has been no real evidence that any special differences of opinion existed, and the following cablegram to *The Sun* confirms this view. The correspondent says: "Professor Leyden, since returning to Berlin, has spoken frankly about the case of the dead Emperor. He said that the statements circulating at St. Petersburg about serious differences between himself and Dr. Zakharin were not quite correct. There had been, now and then, diverging opinions, but in consultation the doctors always arrived at an amicable compromise. The statement that a quarrel had taken place about Dr. Zakharin's frankness with the late Czar was a misunderstood report. It was the Czarina, not the Czar, from whom the German professor wished to conceal the truth as long as possible, out of regard for her delicate health and because he believed the full knowledge of the situation could be of no use to her. Professor Zakharin was of a different opinion. It, however, is not probable that a quarrel between the doctors will ensue, as in 1888, after Emperor Frederick's death."

A Co-operative Medical Warehouse.—A considerable number of medical men in Berlin have started a "Warenhaus," or warehouse, for the supply of many other things besides medical stores. It is proper and right for medical men to unite and club together for their own benefit, and indeed it is proper and right for any individuals of any class to act in a similar manner.

Errata.—Dr. H. J. Garrigues writes:—"Will you kindly correct the following misprints in the MEDICAL RECORD of November 10th: Page 578, second column, 29th line from bottom, for 'separated' read 'suppurated.' Page 579, first column, 8th line from top, for 'introduction,' read 'induction.'"

Attempts to Revive the Electrically Executed.—The idea has violently seized some gentlemen that people executed by electricity are not killed by the shock; and the Governor of New York has been petitioned to allow experiments to decide whether those who have been "electrocuted" can be revived.

The Treatment of Diphtheria by Antitoxin.—The first report on the therapeutic value of Behring's antitoxin in the treatment of diphtheria has been communicated to the Budapest Society of Physicians by Professor Johan Bokai, the well-known pediatric physician. He used the serum at the Budapest Stephanie

Hospital for Children from September 21st till October 22d, when the treatment had to be stopped on account of the lack of the serum, which had not been obtainable since then from the German clinical establishment at Hoechst, near Frankfort. During the time stated above 35 cases of diphtheria were treated with the serum. There were 9 cases of pharyngeal diphtheria, 7 cases of pharyngeal diphtheria combined with nasal diphtheria, 4 cases of pharyngeal diphtheria combined with slight laryngeal diphtheria, and 15 severe cases of laryngeal diphtheria. There were, therefore, thirty-seven per cent. of mild and sixty-three per cent. of severe cases. The oldest patient was twelve years of age, and the majority of the cases (20) were below four years of age. Five of the 35 cases died, giving a mortality of 14⅜ per cent. This result seems very satisfactory if compared with the statistics of the previous epidemics. The following table shows the number of children treated from October, 1891, to 1894:

October.	Admitted.	Died.	Recovery.	Percentage of Recoveries.
1891.....	74	72	32	43.2
1892.....	56	24	32	57.1
1893.....	60	37	23	38.3
1894.....	35	5	30	85.6

Regarding the immunizing power of the serum, the results were less favorable, and there were cases which underwent relapse, though injections of the serum had been made. It seems that the serum is excreted within from eight to seventeen days after the injection, and that the organism loses its immunity in the course of this short time.—*The Lancet.*

A Quarrel Over the Diphtheritic Antitoxin.—There is an unpleasantness in Berlin over the diphtheria antitoxin. Professor Behring, who has been made Professor of Hygiene at Halle, recently published an article in a lay journal in which he claimed priority in the matter of the discovery and use of the serum, and accused Professor Virchow of not giving him credit and of recommending the use of Aronsohn's serum. It seems that Aronsohn, as soon as Behring's discovery was made, at once went to work and manufactured a serum by the same methods, but made one that was stronger, and put it promptly on the market. Professor Virchow publicly disclaims any claim for himself or others, however. Evidently there has a good deal of the commercial spirit crept into the manufacture of the antitoxines.

Diphtheria Antitoxin in France.—C. W. Chancellor, United States Consul at Havre, has just made a report to the Secretary of State recommending that the antitoxin should be supplied by every State and Municipal Government in the United States. The difficulties in the way are foreshadowed somewhat by recent experiences in Paris. He says:

So far, Dr. Roux has been unable to meet the demand for the serum, and he has had to confine himself to sending to the provinces only a sufficient quantity for urgent cases; and it is to be feared that this state of things must continue for some time. To provide for the needs of the entire country, the Pasteur Institute would have to possess a permanent establishment of over a hundred and fifty immuned horses, and, in addition to the heavy expense thereby entailed, the present accommodations are insufficient. Already, it has been suggested that auxiliary institutes be established in all the principal towns of France, the expenses to be sustained by the various municipalities. The city of Marseilles has decided to establish an institution, and the municipality of Honfleur, in this consular district, has contributed a liberal sum of money to be applied to the production and distribution of the serum for that particular community. A plan has also taken practical shape at Rouen and Havre to aid in this great humanitarian work. Individual subscriptions have been made to the extent of 40,000 to 50,000 francs ($7,720 to $9,650) in the two cities to supply the necessary means of accomplishing the desired end. At Havre, a healthy young Normandy horse of four years of age, that has never been put to work, has been purchased and is now under observation in the stables of the veterinary department of the Government at this place. In order to take every precaution, and to insure the success of the experiment, this horse has already been inoculated with *maléine*, an agent which, when inoculated on a perfectly healthy animal, produces negative or harmless results. After this, the horse, if perfectly healthy, will be successively and slowly rendered immune by injecting beneath the skin of the neck or shoulder gradually increased doses of the toxine made by cultivating virulent diphtheritic bacilli exposed to the air. Immunity being thus established in the horse, which requires from six to eight weeks, the serum of the blood of the animal when drawn and injected subcutaneously into the human subject will produce the desired preventive and curative action.

Post-Graduate Medical School.—Dr. George T. Elliot has resigned the Professorship of Dermatology at the Post-Graduate Medical School.

Library of the Academy of Medicine.—To meet an apparent demand, it is announced that the library of the New York Academy of Medicine will be open until 10.30 instead of 10 P.M. The new regulation will be made permanent only in the event that the use of the library between the hours named shall be sufficient to justify the increased expense.

Ether as an Intoxicant.—The *Lyon Médical* states that the habit of getting drunk on ether, which originally came from England, has existed in France for the last five or six years. The number of persons addicted to this form of debauchery seems to be growing greater, and cases are not uncommon in which persons drunk with ether are arrested in the streets.

A Biological Laboratory for the Philadelphia Board of Health.—At a recent meeting of the Philadelphia Board of Health the Sanitary Committee presented a report recommending the establishment of a Biological Laboratory and the engagement of a competent bacteriologist and such assistants as may be required for the purpose of conducting investigations of contagious diseases, and facilitating diagnosis, of investigating water supplies and food supplies, and of indicating and, as far as possible, providing the appropriate remedial measures.

The "Laziest" Man has at last met with his just reward. Dr. George Ross reports the death of a man from peritonitis due to rupture of the bowel brought about by

a novel and labor-saving method of taking an injection. This ingenious man simply fastened the rubber hose to the bath-room faucet and turned on the spigot. The last time he gave it one turn too much and hence the result. —*Times and Register*.

Relative Standing of the Graduates of the Various Medical Colleges examined by the State Board of Medical Examiners, representing the Medical Society of the State of Pennsylvania, June 11–14, 1894.

Medical College from which applicants graduated.	No. examined.	No. failed.	Per ct. of failures.	Aver. grade.
University of Pennsylvania	76	1	1.32	87.76
Woman's Medical College	18	2	11.11	83.44
Jefferson Medical College	67	5	7.46	83.29
Medico-Chirurgical College	26	3	11.54	82.48
Western Pennsylvania College	44	3	6.82	81.13
College of Phys. and Surgs. (Balt.)	3	1	33.33	80.68
Baltimore Medical College	8	5	62.50	75.81
Miscellaneous Colleges	26	9	34.61	74.77
Total	268	29	10.82	82.18

—*Medical News*.

The Craig Colony for Epileptics.—The managers of the Craig Colony for Epileptics met in Albany, N. Y., November 14th, and consisted of Dr. Frederick Peterson, of New York; Mrs. J. B. Wadsworth, of Geneseo; George M. Shull, of Mount Morris; Mr. Cudderback, of Buffalo; and Dr. C. E. Jones, of Albany. A report was adopted which will be presented to the Legislature recommending an appropriation of 300,000 dollars for the permanent establishment of the colony and the construction of the necessary buildings. The colony, which is situated in Livingston County, a few miles from Mount Morris, where 1,800 acres have been purchased by the State, is to be modelled after the German Epileptic Colony on the cottage plan. The managers are of the opinion that the colony can be made self-supporting with the introduction of appropriate industries for the patients. There are 12,000 epileptics in the State, 1,200 of whom are now cared for in the State hospitals.

Dr. William P. Spratling, of New York City, was elected Superintendent of the colony.

Twelve Hundred Physicians have already registered as medical practitioners in Massachusetts.

Tulane University.—Dr. Tiffany, of Baltimore, succeeds Dr. Miles in the chair of surgery.

Typhoid Fever at Wesleyan University.—An epidemic of typhoid fever has broken out among the students of Wesleyan University, and ten cases were reported on November 3d and 4th. One death has already occurred (a Freshman), and one of the faculty is dangerously ill. The origin is thought to be the water from an old well which has been found to be contaminated.

For the Religious Care of Medical Students.—A religious guild, called the Guild of St. Barnabas, has been started in London for the benefit of medical students. In making the announcement *The Guardian* remarks that probably the class most overlooked by the Church, amid all her various forms of work, is the class of educated young men generally. The urgency of the case, so the writer thinks, becomes even more obvious when the intellectual temptations of the necessary studies of medical men are considered.

Johns Hopkins Medical School.—The second year of the Undergraduate Department in medicine opened on October 1st. There were 31 entries, making in the two years 50 students in all. Of these, 13 are graduates of Johns Hopkins University, 8 of Yale, 5 of Harvard, and the others of the smaller colleges.

Obituary.

AMANDA SANFORD HICKEY, M.D.,

AUBURN, N. Y.

Amanda Sanford was born in Rhode Island in 1838. When seven years of age she came with her widowed mother to Scipioville, in Cayuga County, N. Y. In later years, when speaking of this time, she said: "I am glad I was poor." Her education was obtained at the Friends' Academy in Union Springs. After graduation, in order to recover her health, which had suffered from school work, and to earn money for the furtherance of her plan to study medicine, she started a vegetable garden, the while applying herself to Greek as a diversion. At the end of a year, one hundred dollars in pocket and restored in strength, she began teaching at the Hawland School, in Union Springs, and reading medicine by herself. In two or three years she was able to enter the Woman's Medical College in Philadelphia. After graduating there, she spent eighteen months in the New England Hospital in Boston, and in the autumn of 1871 went to Ann Arbor, Mich., graduating there the following spring with the first honors, the only woman in a class of ninety. In 1872 she settled in Auburn, and was rapidly successful in practice. The year 1879 was spent in study in Paris and London. She was a member of the original staff of the Auburn City Hospital, and continued an active member till her death. She married Mr. Hickey, of Auburn, in 1884.

These are the outlines of a career, unusual in the impression left upon the hearts and minds of associates and friends. She was a woman of dignified and stately presence, which, united with natural reserve, would have made her appear cold, had it not been for her finely modulated, sympathetic voice, and the gracious serenity of her smile. She possessed in a rare degree the gifts of silence, deliberation, and perseverance. But though self-reliant and self-contained, as all strong natures are, she won the affection as well as the esteem of those with whom she came in contact. The gratitude of patients, poor as well as rich, and the warm attachment of persons of varied temperaments, attest the charm and unselfish devotion as well as the power of her personality; while the thorough-going confidence and respect of her colleagues rewarded the honor and magnanimity of her professional relations. In her calling she possessed courage and skill, operating with success in cases of varied intra-abdominal disease. It was, however, as the trusted family physician, friend, and counsellor, that her gifts and character best expressed themselves. Many mourn for her as for an ideal and an inspiration lost.

Dr. Hickey died October 17, 1894, of pneumonia, contracted, it is supposed, by chill after assisting at a tedious abdominal operation in an over-heated room. Death did not take her unawares. Her intuition was, even in her own case, not at fault, for she foresaw the danger while yet distant, and with characteristic calm made dispositions for the future. In accordance with her wish, her body was committed back to earth in the village cemetery at Scipioville, where her life of study and labor and high usefulness in this vicinity had its beginning.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, November 8, 1894.

JOSEPH E. WINTERS, M.D., CHAIRMAN.

Ductus Omphalo-entericus Persistens.—DR. SARA WELT presented for the second time the child which had had a tumor first observed soon after birth at the site of the umbilicus, and which was proved by recent removal to be formed on the ductus omphalo-entericus persistens. There was but little hemorrhage, and it was checked by cautery.

Antitoxin Treatment of Diphtheria, Based upon a Series of Cases Treated at Willard Parker Hospital.—DR. A. CAMPBELL WHITE read the paper. (See p. 609.)

Observations in Berlin.—DR. HERMAN M. BIGGS opened the discussion, and spoke essentially as follows: Perhaps it may be of more interest to you if I simply give an account of my own observation of work done in the antitoxin treatment of diphtheria in Berlin the past summer. The institute for infectious diseases in Berlin was founded by the German Government under special act, and is devoted solely to experimental, original investigation. It has a corps of men connected with it, the very best men in German scientific medicine, such as Koch, who is director, Ehrlich, Behring, etc.; men who have been known for a long period for their observations in bacteriology. Attached to the institute is a hospital for infectious diseases. A large part of the work on the antitoxin treatment of diphtheria has been done in the institute, or in connection with it. We must remember, in judging of its value, that it is not, as with most other discoveries, or alleged discoveries, in bacterial therapy, simply a discovery. It is an original development, the result of a long series of scientific observations which have been going on for years.

In going over the work in Berlin I was very much impressed by the fact that, among these men who had been working up the subject for two or three years, or longer, and who had treated a large number of cases of diphtheria, the first series of five hundred having just then been completed, there was not the faintest shadow of a doubt as to the value of the antitoxin treatment. They seemed to feel absolutely convinced that the experimental stage had been passed, and that the value of antitoxin as a specific in the treatment of diphtheria was a thoroughly established fact. That seemed to me a most surprising and a most encouraging feature of the question at that time. And when one turns to the other side and considers for himself the evidence to justify belief in the treatment, it seems to me he has even a stronger basis for confidence than the positive testimony of others.

Observations in bacteriology have shown conclusively that, so far as infectious diseases are concerned, the constitutional manifestations are not due immediately to the micro-organisms, but rather to the products of their life-processes, and that death, whenever it occurs, is almost invariably the result of chemical poisoning, the absorption of these bacterial products. That these toxins, or tox-albumins, or ptomaïnes, whatever they may be, depend on the micro-organisms and are their main offensive weapons, and that without them the micro-organisms become almost harmless, and are unable to compete with the tissue-cells in their struggle for life. We know further that in all the infectious diseases, one attack gives more or less complete and more or less permanent immunity against future attacks. It has been shown further, experimentally, that this immunity can be induced artificially, not only by the inoculation of animals with the micro-organisms themselves, but also by inoculation with the chemical products obtained through cultures of such micro-organisms. Further observations along this line have shown that this immunity is due to the development of something in the circulation. This something gives immunity by neutralizing the products of the infectious organisms.

Now, it has been possible to separate these chemical substances in some of the infectious diseases; they are the most powerful and virulent poisons we know of. In diphtheria it has not yet been possible to separate the toxin, but we can measure its strength biologically by its influence on susceptible animals, and a standard has been fixed for determining the strength of the toxin.

A normal toxin solution is one of which one-tenth of a cubic centimetre will destroy a guinea pig in a definite time, about forty-eight hours. This forms the standard by which the dosage is determined, as already stated; we do not know what the antitoxin is which is developed in the circulation as the result of inoculation with the chemical products of micro-organisms, but we suppose that it is an albumin; it is certainly allied to albumin. But we do know that it has the power to neutralize the poison of the micro-organisms which produce a specific toxin. We know that the amount of antitoxin in an animal can be enormously increased by repeated inoculation with the toxin. At first small doses are employed and gradually increased. Tolerance is thus rapidly increased. This increased tolerance is due to increased antitoxin in the circulation of the animal which is being immunized, until finally the amount of the neutralizing principle is relatively enormous.

The amount of antitoxin action can be measured by the amount of the normal toxin solution that it will neutralize. The blood-serum which has been taken from the immunized animal is mixed outside the body with the toxin solution, and by the amount of toxin solution which it neutralizes is its strength and curative value determined.

There is no reason why this antitoxin should not have the same power inside the human body that it has outside. We know that the toxins cause the poisoning in diphtheria, producing constitutional manifestations and death. We know that the antitoxin serum derived from animals which have been immunized, will destroy this toxin outside the body, so that it becomes absolutely harmless. We know further that the value of the antitoxin serum in the treatment depends upon its dosage and its strength; that the dose must be graded not only to the strength of the serum, but also to the age and body-weight of the individual. This is further confirmation that it does not act in a biological way, but chemically. It acts by neutralizing directly, and its action is proportioned to its strength and its amount.

It seems to me that it is the history of the development of the antitoxin treatment of diphtheria which gives it peculiar significance, and gives the greatest encouragement for belief in its efficacy. It is not a discovery, an empirical observation, but it is a logical development from a long series of careful and thoroughly confirmed scientific observations.

DR. W. H. PARK said: I shall try, in discussing the antitoxin treatment, to avoid, as far as possible, repeating what has already been said, and will speak a little more in detail of animal inoculations, as showing what we may expect in the treatment of disease in man. All know how difficult it is to tell in human beings just what the therapeutic effects of drugs are, and perhaps in no disease is this more true than in diphtheria. Some of you may have read Professor Loeffler's recent article, in which he described a new method of local treatment of diphtheria, stating that in about seventy nine cases he has not had a single death, and he apparently believes that in this local treatment he has almost a sure cure for diphtheria, leaving out, of course, laryngeal cases. Now and then we read of some person having treated a number of cases with bichloride of mercury without the loss of a patient. Yet we know that in neither bichloride nor in a mixture of alcohol and other substances which Professor Loeffler uses, can we hope to have a much better percentage of recoveries in all cases of diphtheria than we have had ordinarily, for it is in little children

that the laryngeal and the fatal cases occur mostly, and in them such local treatment cannot be carried out. So I think it is well to look a little more at the experimental evidence regarding the antitoxin method, in order to judge of its value in the treatment of diphtheria in human beings.

When bacteria are grown in broth or other culture mediums, they at the same time develop the toxins which produce lesions, and you have been told that when these toxins of bacilli are injected in animals, large or small, in less than fatal doses, the animals gradually get tolerance; so that in three or four months you can give them what ordinarily would be fatal doses, and produce no symptoms. Doses which would kill a thousand guinea-pigs will cease to have any effect upon a single guinea pig which has been thus immunized, so that something marvellous has occurred and has produced antitoxin in the blood. As you have already heard, we do not know what this antitoxin is chemically, but we know it is there, since we can measure it by its results. It neutralizes the toxins. But how? Different observers have different ideas on this question. It certainly does not destroy them. The antitoxins have been injected into animals and into human beings, and the toxins have thereupon ceased to produce their harmful effects, yet they are still there—both antitoxins and toxins. That is proven in a number of ways, and it is only necessary to mention the fact here. In diphtheria they are so much alike that you cannot separate the toxins and the antitoxins when mixed. But it has been found that if you put a certain amount of antitoxin in with a certain amount of toxin, there will be no effect from the injected fluid, while the toxin taken separately would kill speedily. Now, it has been found that if you inoculate an animal with toxin and immediately afterward inject antitoxin, a very small amount of the latter will suffice to prevent the development of diphtheria. If three or four hours elapse, it will take a larger dose of the antitoxin; after twelve or twenty-four hours the dose will have to be very greatly increased, and if the animal is already dying, no amount of antitoxin will save it. So in diphtheria treated by antitoxin in the hospitals, it has been found that where the injections have been begun on the first or second day, they have done very well and have required only one or two doses; while in cases treated not before the third or fourth day, it has required repeated large doses, and even then one may not succeed in curing the patient.

Differs from Tuberculin.—Now, some of us may have a misty idea that this antitoxin treatment is like that by tuberculin, and is liable like it to inspire too great hope to withstand the test of time. But the two are quite different processes. With tuberculin we inject a toxin to develop antitoxin in the body, while in diphtheria we first produce antitoxin in the bodies of animals, and only inject the antitoxin, which is absolutely harmless, into the patient afflicted with diphtheria.

You know that when serum from certain animals is injected into man it may create some disturbance, and this will account for the rash which has been produced in some instances of the antitoxin treatment of diphtheria. It was not due to the antitoxin. The serum from the horse scarcely ever produces any symptoms.

We have, then, in this treatment of diphtheria, a method which need not interfere with any other being carried out at the same time, and one which will do no harm to the patient.

My own experience with the antitoxin treatment has been chiefly in watching the cases, through the kindness of Dr. White, at the Willard Parker Hospital. Outside I have had only two cases, and these I believe would have recovered any way, but they probably recovered more quickly under the antitoxin treatment. The physicians in attendance were struck by the almost immediate improvement in the patients following the injections.

Effect on the Membrane.—Now, it may strike some that if the antitoxin has no effect upon the duration of the membrane and on the duration of the bacilli, it shows it has not much influence on the disease. It must be remembered, however, that the antitoxin is not to any marked extent a general antiseptic. It is not what we may have been seeking, something to kill bacilli without killing the patient. It is quite different. It simply neutralizes the poisons which the germs develop, but does not directly influence the growth of the bacilli, nor directly affect the membrane, except in so far as it may neutralize the effect of the poisons in producing membrane upon the throat. In animals, however, in which large doses have been employed the membrane has always separated much more quickly than it usually does.

In looking over the cases treated by this method I found about 1,180, the mortality of which, instead of being forty-four per cent. as it ordinarily is under exactly the same conditions, fell to twenty per cent. Although we cannot judge in local epidemics by figures, I think that in general hospitals, where all the other conditions remain about the same, we may be pretty sure any marked reduction in the mortality is due to the special treatment employed. I certainly feel that we have in this antitoxin treatment a great outlook, and I hope we shall soon have the remedy accessible for use in every case here as well as elsewhere.

Dr. George F. Shrady supposed that he had been invited to make some remarks on the subject on account of his connection with the Willard Parker Hospital, and because of the opportunities which were thus afforded him for verifying the reports and endorsing the statements of Dr. White in his very interesting and instructive paper. He could therefore give his impressions of the results of the antitoxin treatment only from a clinical aspect, and as one who had survived very many epidemics of specific remedies for diphtheria. So far as present results showed in Berlin, Paris, and New York, antitoxin appeared to give better statistics than any other form of treatment. Then it was so simple in its administration that anyone could use it. He was much struck with the remarkable change for the better which occurred in some of the cases related by Dr. White, seeming to prove that some profound and radical curative processes had manifested themselves in the general system. The remedy appeared to reinforce the natural vital resistance to systemic poisoning. The rationale of treatment was founded on a sound bacteriological basis, and commended itself accordingly to progressive clinicians. Indeed, the principle of immunization would doubtless prove as important to therapeutics as had been asepsis to operative surgery. It seemed to him that we were, as far as the fundamental principle was concerned, on the eve of brilliant discoveries along that line.

The present difficulty in testing the remedy was its great scarcity, and the difficulty of obtaining supplies in the near future. A month ago he had cabled to Berlin for antitoxin, and had received a limited supply, but not enough for extended experimentation. Aside from the opportunities of witnessing Dr. White's cases, Dr. Shrady's personal experience had been limited to one case, which was sent to him by Dr. Fischer from the Messiah Home for Children. The antitoxin (Behring's) was injected into the intra-scapular region, with the result of relieving the grave systemic symptoms, and eventually curing the child. Thus far he believed that the remedy deserved a more extended trial, and he hoped that soon the supply of the antitoxin would be equal to the demand.

Dr. W. P. Northrup thought the paper of Dr. White hopeful. Like the opening chapter in a novel, it promised well, and one felt like turning over to the back pages to see how it would come out. There were several things which had to be proved at so hopeful a period of any remedy. In the first place, the cases treated may have occurred at a time when everybody suffering from diphtheria got well. As far as he had been able to learn, the percentage of recoveries in institutions at this particular time was especially good. He wished to join in the general hopefulness of this occasion. But he

would not forget that we had had in the past many disappointments in remedies.

Dr. Northrup had observed, with others of his colleagues, that in some of the European hospitals they claimed to get results by certain methods of treatment, say by intubation, which were much more favorable than had been obtained here. He mentioned the fact as one to be borne in mind when judging of the value of any method of treatment based on experience over there. He had had some of the antitoxin sent him for use in diphtheria, but had not been able to find a case in which to employ it, at the Foundling Asylum or elsewhere. This showed very well the sporadic nature of the disease at this time. A special test of the new treatment would be found in rather rare cases of rapid toxæmia from the commencement, in which death sometimes took place within twelve hours from the first symptoms of diphtheria. In such cases nothing else than possibly the antitoxin could have any effect. It seemed that the influence of the antitoxin on the pulse was the most hopeful indication.

Dr. Louis Fischer spoke of his observations in Berlin of two methods of treatment, one by Aronson, the other by Beginsky. The latter informed him that the mortality in diphtheria had fallen from thirty-seven per cent. to thirteen per cent. under antitoxin treatment. The course pursued was to inject at once every case brought to the hospital with a pseudo-membrane. Next day, the bacteriological examination having been made, the cases of pseudo diphtheria were separated from those of true diphtheria, and in the latter the antitoxin treatment was continued. Dr. Fischer had had some personal experience with the treatment very recently, in a hospital in Philadelphia, and it would appear to have had more influence on the membrane in the throat than had been described by others. Although he had been favorably impressed by the antitoxin results, he did not think it safe to become too enthusiastic.

Sceptical.—Dr. Henry Berg said the difficulty in judging of the value of any method of treating diphtheria related to prognosis, or our ability to judge of the severity of the cases. Frequently the very ones which we expected to terminate favorably died, while those which we expected to die took on a marked change for the better in a few hours, and went on to recovery. He had seen nearly all the cases treated by antitoxin by Dr. White at Willard Parker Hospital, and while he could not say that all of them were not severe cases, yet he could not say that they were. Some of them seemed to him to be only ordinary cases of diphtheria, while some seemed to be very severe ones, although he was not positive that he would have made a fatal prognosis. These facts simply showed that if we were going to draw deductions with regard to the efficacy of any given treatment in diphtheria from figures, the number must be very large, and the only way to test the new method was to place the antitoxin in the hands of all the physicians of the city. Dr. Berg thought statistics here and those abroad would point to the fact that our treatment of diphtheria was either better, or that epidemics here were less severe.

New Syringe for Cleansing the Nostrils.—Dr. Sommerset presented a syringe for cleansing the nasal cavities in diphtheria, and said that with it one could give more force to the stream than with the Davidson syringe, which was necessary in rare cases where the occluding membrane held tenaciously and had to be removed to prevent sepsis.

The chairman, Dr. Winters, testified to the value of this syringe. Regarding statistics of mortality-rate as basis for judging of the efficacy of the antitoxin treatment, he thought they were apt to be misleading. Ordinarily the entire number of deaths was meant, but in some of these special statistics certain cases of death had been excluded, which, of course, would make a better showing for the antitoxin. It seemed that abroad the mortality rate without this treatment had been placed enormously high. In this city the Board of Health record gave a death-rate of only twenty five to thirty-three per cent. This must necessarily be too high, if it was remembered that all fatal cases were reported, while many non-fatal cases were not reported at all. He thought it certainly did not exceed twenty-five per cent. Again, he doubted whether there was any serious infectious disease so badly treated as diphtheria. Faulty methods being omitted under the antitoxin treatment, would in itself cause a better mortality-rate. Further, mortality statistics were usually made up from cases to which a reputable physician was not called until the disease had well advanced, say after three or four days. These facts had to be taken into consideration in judging of the value of the new antitoxin treatment. It would be necessary to wait until long use by many physicians had tested the method.

Dr. Andrew H. Smith said a very good nasal syringe could be made out of any ordinary one, by attaching to it a rubber nipple the opening in which was smaller than that in the end of the syringe, so that the nipple would be made to dilate by the stream and fit closely to the nostril. Regarding antitoxin, he thought it would prove of inestimable value if it had no other effect than to stop the pernicious practice of applying frequently local remedies against the struggles of the little patients.

Dr. White closed the discussion.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, October 24, 1894.

Dr. D. Bryson Delavan, Chairman.

A Case of Sarcoma of the Palate Successfully Treated by the Toxins of Erysipelas, was the title of a paper read by Dr. W. B. Johnson, of Paterson, N. J. (See page 616.)

Dr. W. B. Coley said: I saw this case before treatment was begun. The case was grave, and I had no hope of treatment doing more than giving temporary relief. The result of my experience with toxins up to last May I reported at Washington, before the Section on Surgery, Congress of American Physicians and Surgeons. The cases reported were 25 of sarcoma, 9 of carcinoma, and 2 or 3 where examination was not made. Of these cases, I reported in detail 5 which I hoped to cure. None of them have shown any signs of recurrence of the trouble. Since that time 3 cases have gone over a period of three years; 2 over two years, and others over one year. Since the publication of the paper, I have treated 10 cases of sarcoma, 3 having been extraordinarily successful. One was an enormous sarcoma of the ilium, filling the right side of the abdomen. I began toxin treatment, then the tumor began to break down and slough out, and after five weeks of sloughing the injections were stopped. The result of treatment and consequent breaking down of the tumor was depressing to the patient, but by stimulation and careful nourishment he began to recover, and I showed him a week ago without any tumor left. On August 15th he weighed 115 pounds; now he weighs 140 pounds.

I have a case of a girl, aged sixteen, with a sarcoma of four months in left scapular region, extending to the median line in front, attached to chest-wall. In three weeks she was able to raise her arm. Injections were given in scapular region only. Improvement immediately was marked, and she is now cured. I had and have other cases, the results of which are similar. The preparation which Dr. Johnson used was erysipelatous and prodigiosus toxin, used in separate bottles, given in small doses in combination. The two cultures are now grown together and subjected to heat; 58° C. is sufficient to kill the germs without destroying the chemical toxin, and no loss occurs as in filtration; after subjecting to heat add sufficient thymol to make a saturated so-

lution. The value of the toxin lies in the virulence of the culture.

The Chairman, Dr. D. Bryson Delavan, said no efforts that we can make will be too great to further the success of these experiments, which have gone so far as to prove that they amount to something more than mere experiments. They have cured one case of malignant disease of the palate, at least.

PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, October 5, 1894.

Henry F. Walker, M.D., President, in the Chair.

Angio-neurotic Œdema.—Dr. Charles L. Dana presented a man with this affection. He was twenty-seven years of age, a bar-keeper, had used alcohol moderately since early youth, and had used tobacco excessively since the age of twelve, smoking, since his twentieth year, as many as thirty to fifty cigars a day. He had never had any venereal disease, malarial affection, rheumatism, or digestive disorder. He had been rather nervous, but that was all.

One morning last February, he awoke to find the right foot swollen. The swelling went down, but next day the left foot was affected in the same way, then the face; and since then all parts of the body had been affected by such œdematous swellings, mostly, however, the face, hands, feet, and scrotum. The swellings would increase until the skin became very tense and hard, resisting pitting, and would disappear in from two hours to twenty-four, none having lasted longer than a day and night. Some would make their appearance while others were fading away. They were whitish in color, with a little rose tinge, but never resembling wheals. Sometimes one side of the face would be swollen to the point of closing the eye, and present a white appearance; sometimes the hand would be of enormous size. The patient stated that he could sometimes bring the swellings out on the face by scratching, and quinine, which some physicians had prescribed for him, had been quickly followed by their appearance. There was no organic trouble with the kidneys, lungs, or heart. The pulse had been rather fast, about ninety, and of very low tension, but not intermittent. He complained a good deal of palpitation. There was no scotoma, no evidence of alcoholic injury of the optic nerve.

Dr. Dana said that in his experience these cases were rare, and their cause and progress was involved in considerable obscurity. Some of the causes which had been mentioned were malarial affections, fright, trauma, exhausting influences of various kinds. This man's case seemed directly due to tobacco, and that which seemed to promptly relieve him was to stop the use of this article. He had had scarcely any trouble since he had given up smoking. In addition, Dr. Dana had prescribed a tonic of mineral acid and strychnia.

The speaker had observed that the excessive use of tobacco, beginning early in life, sometimes produced curious vasomotor disturbances. The tobacco seemed to have a special effect in some cases on the vasomotor nervous system. Writers on angio neurotic œdema classed it as having some relationship to urticaria, giant wheal, and like conditions, but in this case there was no dietetic influence nor resemblance of the swellings to the wheals of urticaria. Until lately, the patient had not been free from the swellings since February, except two weeks in June.

Dr. Francis Delafield had hoped to hear of some particular treatment of the disease. He recalled two comparatively recent cases in women who gave no neurotic history, had no bad habits, were in comfortable circumstances; the swellings continued to develop without apparent cause for several months, and then ceased. He did not know why they had the affection, nor why they stopped having it. It seemed to be not very uncommon, and an efficient plan of treatment would be a great convenience.

Dr. Dana remarked that the cases were probably seen oftener by the general practitioner and dermatologist than by the neurologist. He had seen but three, and had not been able to keep track of them, but knew that two got along fairly well.

The president, Dr. Walker, had seen a man in a few of the several attacks which he had been having for two or three years, consisting in great swelling of the tongue, causing it to protrude from the mouth, and less swelling of the lips, the condition gradually disappearing after some hours. At first there was fear the glottis or larynx might become affected and cause strangulation, but this fear had passed off. The man was a smoker, a moderate drinker, had a rather gross appetite, slight rheumatic trouble, no constitutional disease.

Dr. G. L. Peabody had also had a case in which the attacks of swelling were confined chiefly to the lips and tongue, in a man of thirty-five, without bad habits, not a smoker, but of gouty heredity. Dr. Peabody prescribed colchicum, and since then the patient had taken this drug when there was a recurrence, but had now been free a long time. He was unable to say whether the colchicum had given the relief.

Extirpation of Tongue for Cancer; Taste and Speech soon Regained.—Dr. Robert Abbe presented a man, fifty-three years of age, whom he had first seen about five months before, when he presented a cancer on the back portion of the tongue, beginning on the left side and extending to the right. There was a little glandular involvement under the left jaw. The patient was dribbling saliva, was unable to masticate, was markedly cachetic, and in deplorable general condition. Dr. Abbe performed Kocher's operation for removal of the whole tongue, and showed the patient because of the remarkable power of speech which he had regained since the operation, four months ago. He had no difficulty in making himself understood in a large room, and was able to utter all the sounds of the alphabet except k, which he pronounced p, saying, for instance, pip for kick. The general health had again become perfect. There was a slight recurrence on one tonsil, which it would be necessary to remove.

Dr. Dana elicited from the patient the fact that he had power of taste, recognizing sweet, bitter, salt, acid, etc. Dr. Dana confessed his inability to explain the existence of this power where the tongue, with the nerves of taste and taste buds had been almost entirely extirpated. It was supposed that normally there was slight sense of taste in the soft palate, but he had himself never been able to recognize taste in that locality.

Dr. Sexton brought out the fact that the patient had a slight burning sensation at one part of the stump, and stated that he had frequently found division of the chorda tympani followed by a feeling as if the tongue were scalded.

Remarks on the Education of the Stomach.—Dr. Samuel Sexton read the paper of the evening, bearing this title. In having chosen as the subject for his paper one which most of those present were better able to discuss than he, he wished to elicit a discussion which might add to the comfort and more perfect manhood of the coming generation. He was of the opinion that most people greatly abused their stomachs by taking too much food, and food of improper or injurious kind. It was especially the excessive quantity and variety consumed at a single meal which had most forcibly attracted his attention at the hotels and in private families. He cited several notable examples of gluttony on the part of children at the expensive hotels here and in Paris, where they did not fail to partake of all the numerous courses printed on the ménu. The parents, so far from reprimanding them for their greediness, took pains to have the little heroes or martyrs fill their pockets with such dainties as might prove tasteful between meals. The author thought it was necessary, for a healthy development, to accustom the stomach to plain, simple, but nutritious food, in rea-

sonable quantity, with periods of intermission sufficient for complete digestion and rest. The agonies which children suffered from colic and frightful dreams constituted a part of the punishment inflicted upon them through the ignorance or thoughtlessness of parents who permitted and even tempted them to make their stomachs a dumping ground for all possible foods and drinks, and many things which were neither food nor drink.

During the discussion Dr. Beverley Robinson said he supposed all would agree that most people ate too much, but he thought there was a tendency among intelligent people to educate the stomach and limit the food of their children. Sweets were ruled out, and the food was given in moderate quantity and at stated intervals.

Gluttony not an American Characteristic.—Dr. Dana could not agree with Dr. Sexton if he meant to imply that over-eating and gluttony were at all characteristic of the American of to day—that was to say, the educated American, the type we were developing in this country. It seemed to him the tendency of the times and of the race was to eat rather less, and he believed it would become still more so. A neurotic people, he thought, would have to live simply and on a small amount in order to retain their health, and the Americans appeared to be learning that fact. His observation had been that it was rather hard to get children of nervous temperament to eat enough. They often left the breakfast table after having eaten very little, and they ate a light dinner. He did not mean to say they carried this to an unhealthy extent, but he certainly had not seen gormandizers among children of a fairly healthy neurotic type. When one did see gormandizing in a child it was almost always a sign of a degenerative taint in that particular person. It was a perfectly well-known characteristic of the epileptic and imbecile or partially developed children, and he supposed, as Dr. Sexton had suggested, that gormandizing was some evidence of atavism. He also thought the paper was quite correct in teaching that we, as a neurotic race, who lived on the nerves and drew largely on the brain, must eat plainly and simply. The only point where Dr. Dana differed from the author was, that he thought Americans had found this out largely, and did live in that way. He had always thought that the American's stomach was a great safeguard to him; it was delicate, and he soon found out that he could not eat excessively, drink excessively, nor smoke excessively. He could not do as the Germans and English.

Dr. Peabody remarked that the Germans had no term expressing dyspepsia, and agreed with Dr. Robinson that they probably had better beer if not better food.

Dr. Dana said he had not stated that the Germans had dyspepsia, but he thought that if the same classes here, as lawyers and teachers, should eat and drink as they did in Germany, they would get sick.

Becoming a Larger and Fuller Developed Race.—The President thought he had observed that the children and youth in New York to-day were larger and better formed than those of eighteen or more years ago, and that it was due to their better feeding and manner of bringing up. In other words, the tendency seemed to be toward a larger and fuller developed race.

Dr. Peabody queried whether that was not due to athletics, and Dr. Walker agreed that athletics had something to do with it as a part of the better training.

Brewers Drink a Keg of Beer a Day.—Dr. Sexton said he once had occasion to examine men who worked in a large brewery, and learned that it was the custom of those who had free access to the beer to drink a keg apiece each day. It was not uncommon for Germans in this country to drink twenty-five glasses or more a day. Children in this city, he thought, had too little exercise and were over-fed, and were not properly educated with regard to diet. One way of entertaining a child was to feed it. Possibly he was wrong, but he believed a very large amount of nervous energy was consumed in digestion, and that over-feeding deprived the heart of a good deal of nervous power which it should receive. The condition of many patients was markedly improved simply by diminishing their food supply.

Surgical Suggestions.

Stone.—Litholapaxy is the operation when the patient is an adult with a capacious and tolerant urethra, with a bladder free from severe chronic inflammation, and with a small or medium-sized stone, or, if large, of soft consistence. The suprapubic is the best operation for large and hard calculi. The medio-bilateral operation should be chosen in all other conditions, because it is the easiest, safest, and best.—Briggs.

Carbolic Acid applied in officinal strength in surgery.

1. No systemic absorption attends its use, and hence no danger, no shock.

2. It is a local anæsthetic. Hence there is not as much pain after the operation.

3. It is in a measure a hæmostatic, acting especially upon the capillary vessels.—Gardner.

Ingrowing Toe-nail.—Remove all of the redundant, hypertrophied, or granular tissues of the skin, and leave the nail alone.—Nuding.

Lung Surgery.—In tuberculous cavity the advantages do not seem to be of sufficient magnitude to warrant an operation, except in a very few instances. Removal from the lung of pieces affected with tuberculous infiltration is obviously in the realm of pure experiment. —Chaplin.

Repeated small rectal injections, it is said, will relieve the intense thirst following abdominal operations.

Local Anæsthesia.—A mixture of ten parts of chloroform, fifteen of ether, and one of menthol, used as a spray, is recommended as an excellent and prompt means of obtaining local anæsthesia lasting for about five minutes.

Cracked Ice, Sawdust, and Salt thoroughly mixed and applied over abscess, felon, tumor, or bubo, will deaden the skin sufficiently to allow of painless incision.

Alcohol will be used less and less in surgery, because scientific investigation has shown the causes of many of the evils it was imagined to counteract, and because, thanks to Sir Joseph Lister, these causes have been got rid of.—Horsley.

Hydroceles of the Neck, after tapping and iodine injection, either quickly refill, or such extensive inflammation is set up as to endanger life.—Stokes.

Granular Lids.—Curetting and brushing with corrosive sublimate is successful in mild, but not suited to bad cases.—Trousseau.

Palpation of the Vermiform Appendix.—Pressure deep enough to recognize distinctly the posterior abdominal wall, the pelvic brim, and the structures between them and the examining finger, forms the whole secret of success in the practice of palpation of the vermiform appendix.—Edebohls.

Rectal Tube.—As a means of diagnosis, or in treating stricture beyond the reach of the finger, tubes of any kind are absolutely useless.—Cripps.

Acetanilide is curative in wounds, lacerations, and internal hæmorrhoids. It is cleanly, odorless, antiseptic. —Woods.

Castration for Hypertrophy of Prostate.—Existing evidence would certainly seem to establish the claim of the operation to further and much more extended trial; and it shows, I think, that even on a basis of experiment and theory alone, I was justified in suggesting it to the profession.—White.

Peat Fibre, as now prepared for surgical purposes, is a fine, brown, glossy wool, with a faint aromatic smell. It feels a little rougher than fine absorbent wool, but makes a more comfortable dressing, as it is much more elastic. Its chief advantage seems to be that it is a deodorant.—BURGESS.

Spinal Cord.—In compound fractures, in fractures of the spinous processes and laminæ, with injury to the cord, in simple fractures and dislocations of the bodies of the vertebræ, if there is a reasonable probability that the injury is due to hemorrhage, operation is advisable; but in all other cases, laminectomy is not an eminently valuable surgical procedure.—THORBURN.

Internal Hæmorrhoids.—The ligature is the safest method of operating for internal hæmorrhoids, as there is less likelihood of its use being followed by hemorrhage, stricture, or ulcer.—DUNDORE.

Sterilize Catgut by means of the vapor of alcohol heated to 120° C., verifying the sterilization by placing bouillon in the same tubes with the gut; if the bouillon becomes turbid the ligatures should be rejected, as the tubes are infected.—RÉPIN.

Management of the Intestines after Abdominal Section.—When the general condition of the patient is fairly good and the abdomen is not distending, and when there is not much colic, let things take their natural course. This advice holds for the great majority of cases.

When the physician is summoned to a case of intestinal obstruction, he should at once point out to the patient the possible necessity of an operation. The neglect to do this has cost many lives, for a considerable time usually elapses before a seriously ill person consents to a dangerous operation.—GERSUNG.

Hypnotic Insensibility to pain can be applied to such operations as extirpation of the breast without the patient manifesting the slightest sign of pain.—SCHMELTZ.

Stricture.—External urethrotomy with Syme's staff and Teale's probe gorget, is preferable for all strictures of the deep urethra where gradual dilatation is impossible.—ROSENSTEIN.

Catgut Drains. — By interlacing in a gabion-like manner the separate filaments of catgut, a tube of any desired size and length can be made. It has the advantage of being capable of perfect sterilization, does not present the inconveniences of decalcified bone, is not rigid, has all the advantages of rubber, resorption can be accurately calculated, and by reason of the openings along its whole extent realizes an ideal drainage.—DESGUIN.

Intubation.—The comparison of the results from tracheotomy and intubation gives, in the first two years of life, better results from intubation than from tracheotomy. —VON RANKL.

Hysterectomy.—The operation should always be begun with the intention of performing the intra-peritoneal method, and removing the whole organ if possible, but the operator must be prepared to adopt any method, should it seem best to do so when the exact conditions are found out during the progress of the operation.—KEITH.

In Cancer of the œsophagus a gastric fistula should be established as soon as the scales show a steady decrease of the patient's weight.—MEYER.

Depressions of the skull in the new-born should be treated by immediate resort to operation, if there are symptoms calling for its performance.—JENNINGS.

Uterine Fibroid.—In all cases of simple myoma or of diffuse progressive hyperplasia (the "soft fibroid" of many authors), complete removal should be practised as soon as the diagnosis is established.—REED.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

OPENING MEETINGS OF THE ROYAL MEDICO-CHIRURGICAL AND PATHOLOGICAL SOCIETIES — SURGERY IN SEPTIC PERITONITIS — LAPAROTOMY IN PERFORATING ULCER— MEDICAL SOCIETY OF LONDON—TREATMENT OF CANCER BY CINNAMON—PAY-PATIENTS IN HOSPITALS.

LONDON, October 27, 1894.

THE Royal Medico Chirurgical Society held its first ordinary meeting on Tuesday evening, when Mr. Lockwood read an important paper on the Surgical Treatment of Diffuse Septic Peritonitis. In the cases he referred to the inflammation had no defined limits, the membrane was smeared with lymph, and the cavity contained thin purulent fluid, often with a fecal odor, or it might be full of gas. The intestines were paralyzed and distended. In these very rapidly fatal cases Mr. Lockwood had operated for fear of overlooking a mechanical obstruction rather than with a view of curing the peritonitis; but he had had success when there was not mechanical obstruction and now detailed the proceedings he adopted. To meet the exhaustion, collapse, and distention he used strychnine and brandy, before operation— and warmth both at the time and afterward, also nutrient enemata, stimulants, and warmth as required. Rapid but methodical operation was important. He punctured the several coils of intestine to withdraw the gas and then let out the fæces through an incision, which he afterward closed. Then of course he irrigated and drained. Two successful cases were described. The object of the paper was not to bring forward novelties, but to insist on the methodical use of known proceedings, and the general feeling seemed to be that the cases related were encouraging. In the discussion some interesting points were raised. Thus Mr. Hulke regarded the paper as valuable, but mentioned that he had sometimes found the intestines so soft that the puncture continued to leak and the attempt to close it by ligature only increased its size. He thought no surgeon would hesitate to enlarge by incision a perforation he found to exist. Mr. Knowsley Thornton regarded the combination of puncture with incision and the protection of the patient from shock as the essential features of the treatment advised and regretted that he had not been more careful in the past to guard against chill, shock, and prolonged exposure. He had long recognized the danger of distention as well as of the septic material spread over the surface for which thorough irrigation was necessary. Mr. Harrison Cripps congratulated the author on showing how to deal with cases which were the bane of abdominal surgery. In cases after childbirth or erysipelas or operations, he thought the poison had passed into the system and was beyond the reach of surgery. Mr. Alban Doran thought so too and doubted if it would be justifiable to operate in truly pyæmic cases, as the viscera were in them almost always affected with secondary deposits. Dr. Norman Moore said some of the collapse might be due to the size of the opening, and mentioned a case he had seen within two hours of rupture of a gastric ulcer. Death occurred in seven hours and very few signs of peritonitis were found at the autopsy. Mr. Marmaduke Shield had often punctured through the abdominal wall for chronic obstruction, but the punctures were apt to leak and set up peritonitis. The trocar should be as fine as a sewing-needle and passed obliquely through the muscular coat, so as to make the opening somewhat valvular. Mr. Bowlby said two incisions, one above and one below the umbilicus, were necessary to ensure complete flushing when the peritonitis was due to gastric or duodenal rupture.

Laparotomy for perforations was also discussed this week at the Medical Society of London, where Mr. Marmaduke Shield read a paper on Ulcerations of the Duo-

denum, with special reference to the latent perforating ulcer of that part, and related two cases in which he had operated. In both the fluid found in the cavity was sweet, and he thought if laparotomy was performed early in such cases the fluid would be found very different from that met with when the perforation was in the cæcum or lower. The importance of thorough flushing, a second incision for this purpose, and other points were insisted on by the author and the speakers who followed.

The Pathological Society opened its session with a good show. Mr. Stephen Paget showed a specimen of ventral hernia from a woman of fifty years of age. Laparotomy had been performed, but she did not rally. He also showed another specimen—tuberculous recto-vesical fistula from a man of about fifty years of age. At the autopsy both lungs were tuberculous, the right testis a caseous mass, and the cord thickened; the wall of the bladder had miliary deposits; a mass of old tuberculous glands and scar-tissue lay between the bladder and rectum, and two fistulous tracks were traced in this, one of which led from the bladder to the rectum, the other from the rectum to the mass, and back again to a lower rectal opening. Mr. H. Fenwick thought the fistula originated in a tuberculous deposit of the vesiculæ seminales which had broken into both bladder and rectum. Mr. Bowlby was also of this opinion, and Mr. Paget said he would make a careful examination of the vesiculæ, and report the result.

Dr. Rolleston showed a tumor growing from the upper end of the left supra-renal capsule. It was as large as a chestnut; on section firm, brown, with hemorrhagic spots.

Mr. Targett showed a polypoid tumor of the œsophagus, which appeared like a fibrous growth which had been invaded by epithelioma. There was an ulcerating carcinomatous growth four inches below, and as catheterism had been sometimes ineffectually attempted, Mr. Shattock suggested it had so become inoculated. Had the positions between reversed it would have been possible for auto-inoculation to have occurred—not so as it was. It was stated that the cervical glands were full of epitheliomatous growth, but no secondary nodules were found in mucous membrane.

Mr. Jackson Clarke gave some account of his investigations into variola and vaccinia. He said his recent work confirmed his conclusions regarding carcinoma and sarcoma. Drs. S. M. Copeman, Ruffer, and D'Arcy Power controverted the views of Mr. Clarke, who replied to their criticisms. We shall probably hear more about protozoa during the session.

Cancer is always a topic of sad interest. Yet, notwithstanding many disappointments, how naturally one listens to any reasonable suggestion as to its treatment! Chian turpentine has had its day. Now, another medicine is proposed. Neither more nor less than cinnamon in the form of decoction administered freely. Dr. Carne Ross, of Manchester, is responsible for reviving this remedy. I say reviving, as I believe is has been previously employed and fallen into desuetude. I should state that Dr. Ross distinctly disavows all pretence that cinnamon is a specific, but he has found it useful in mitigating pain, so much as to be a substitute for morphia. Moreover, in some of the cases related the progress of the disease seems to have been delayed or arrested. Still we know that this sometimes occurs under other treatment or none, and further trials are needed before subscribing to the expectation of being as fortunate as Dr. Ross seems to have been in his run of cases. I have no doubt that cinnamon will be largely prescribed for a time and so we shall be able to judge whether it is of use, and if so, to what extent.

Great indignation is felt and has been expressed at the determination to admit pay patients into the Great Northern Central Hospital. These patients are to have the attendance of the Honorary Staff. A petition against this proceeding, signed by upwards of two hundred medical men in the northern suburb, has been presented by an influential deputation, but has not turned the committee from their purpose. It is certainly open to question whether the committee are within legal rights to use a building provided for charity, to let as lodgings for invalids who are able to pay. The injustice of thus robbing local doctors of their patients is obvious; but we have made our services so free that the public sets little value on them, and the reasonable protest of the practitioners affected will be called selfish jealousy and trade-unionism. So let it be, the general practitioners have their positions to maintain, and if the consulting staff will not listen to reason, should adopt the trade-union plan which will be attributed to them, and boycott the staff. Mr. Spencer Watson has resigned his surgency rather than be a party to the contemplated injustice. He has thus set an example which his colleagues should not have left him to do single-handed, and which they would be well advised to follow at once and in a body.

GOAT SERUM IN TUBERCULOSIS.

To the Editor of the Medical Record.

Sir: Referring to the present treatment of tuberculous disease by "immunized serum," it appears from Viquerat's investigations that he found the ass and mule to be the only non-tuberculous domestic animals—though he admits that the immunity enjoyed by these is not absolute.

There are, however, two other domestic animals which enjoy a far greater resistance to tubercle than the ass or mule, viz., the common goat and the ewe. The immunity of the goat is particularly noticeable in Ireland, where consumptives abound, and where the goat—an omnivorous feeder—has been known to eat paper and other articles covered or contaminated with the expectoration of consumptives, without injury or any loss of health. Warm goat's milk has been highly regarded as a remedy in consumption or "decline," since the days of Galen (who, by the way, was the first to treat tuberculosis by strychnine—or rather "Ignatius Bean"), and ewe's milk boiled with mutton suet was at one time a famous remedy in all chest diseases.

Perhaps it may be worth while to test the natural and artificial immune serum of the goat in future experiments.

C.

IS SALMON POISONOUS TO DOGS?

To the Editor of the Medical Record.

Sir: There is a widely spread belief among people in Oregon and Washington, that salmon is very dangerous, and in many cases fatal, to dogs, when eaten. It is claimed that the flesh, and blood more particularly, contain something that is poisonous to the canines. Now, I am very sceptical in regard to this salmon theory, and find that many intelligent persons disbelieve it, and point to the fact that dogs in Alaska are fed on salmon almost exclusively, and no harm results.

There is no doubt but that more dogs die here than in the East, but they all have the same symptoms, which are there known by the general term of distemper, which is in reality a catarrhal fever with dysentery. A young dog will be taken sick and mope around the house, refusing to eat. The nose becomes hot and dry. The ears, feet, and lips feel cold, and the mouth has a bluish tint, eyes are suffused. Constipation is present at first, but is soon followed by the most offensive dysenteric discharges, until finally the poor dog succumbs from exhaustion. This is a type of the so called salmon poisoning. I have never seen, in any work on diseases of dogs, mention made of "salmoning," as it is commonly called, and doubt the existence of any such thing as dogs dying with the above-described symptoms miles from any streams of water. Myths die hard, and superstition is as widely diffused as it ever was, only it continually changes its form. I should like the opinion of the readers of the

MEDICAL RECORD, either through its columns or by letter, on this subject, as it is one of much interest to dog owners in this part of the world. Yours,

F. W. VAN DYKE.

GRANT'S PASS, ORE.

THE RESORCIN TEST FOR FREE HYDROCHLORIC ACID.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I have read with interest Dr. Julius Friedenwald's article on the use of the resorcin test of Boas for hydrochloric acid. For the last eighteen months I have used this test to the exclusion of the phloroglucin vanillin test and have found it sensitive and convenient. Although I have occasionally verified my tests with known dilutions of hydrochloric acid, I have made no such exhaustive study as that of Dr. Friedenwald. Still, as practical experience is always good evidence, I am moved to add my mite and to thank the doctor for his careful research.

A. L. BENEDICT, M.D.

BUFFALO, N. Y., October 13, 1894.

CAR SANITATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The letter in the MEDICAL RECORD of November 3d, by W. Washburn, M.D., on the subject of "Car Sanitation," is of great interest, and I beg to point out an additional source of danger and cause for complaint.

To those of us who are obliged to ride on the elevated trains in the late afternoon, it will be remembered that there is a peculiar disagreeable odor, quite distinct from that due to the presence of a large number of people. Indeed, it is more often observed when entering trains at either terminus of the road, when the cars are empty. This odor is due to the imperfect combustion of the oil-lamps, which produces carbon monoxide (CO), instead of, as is the case when combustion is perfect, carbon dioxide (CO_2). This carbon monoxide, as is well known, is a very poisonous gas, and the milder symptoms of headache and malaise resulting from it I have frequently observed, after riding in these cars for twenty minutes. The reason of the existence of this condition is a total disregard on the part of the railroad authorities for the welfare of its patrons. The blame cannot be thrown by them upon the passengers, as perhaps might be done in the case of collection of filth from expectorated matter. It is all owing to their desire for economy. The lamps are lighted in the early afternoon, before they are needed, and then the wicks are turned down as low as possible. Complaint to the guards is of no avail, they have their orders from those in authority, and cannot be blamed for the existing condition.

Perhaps this has been pointed out before. If so, my excuse for writing now is the fact that the condition still exists, and only by continual agitation of these questions of vicious abuse of power on the part of certain corporations, can we hope to have them removed.

FRANK A. BOTTOME, M.D.

NEW YORK.

The Song of the Girdner Telephone Bullet Probe —

After the "shootin's" over,
After the scrap is done,
After the "Dago's" punctured,
After the cowboy's fun (?)
Many's the gun "not loaded,"
I can attend to all;
Merrily I will meander
After the Ball.

S MORRIS CONANT.

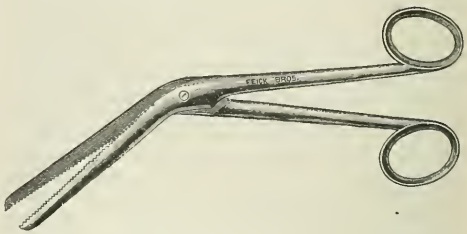
New Instruments.

A NEW SERRATED NASAL SCISSORS FOR THE REMOVAL OF HYPERTROPHIES AND TURBINATED TISSUES.

BY D. N. RANKIN, M.D.,

ALLEGHENY, PA.

THE Serrated Nasal Scissors devised by me has proven a very valuable instrument for the removal of hypertrophied turbinated tissues, warty growths of the nares, and exostoses of the septum. In many instances it has taken the place of the nasal saw, from the fact that it requires



less time, pain greatly diminished, and less hemorrhage in removing the growth. The accompanying cut will show its appearance, and is one-half the actual size of the scissors. This instrument was made for me in a most excellent manner by Feick Bros., 49 Sixth Street, Pittsburg, Pa.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 10, 1894.

	Cases.	Deaths.
Tuberculosis	117	77
Typhoid fever	16	3
Scarlet fever	53	4
Cerebro-spinal meningitis	2	3
Measles	25	2
Diphtheria	137	37
Small-pox	19	0

The Chinese Imperial Medical College of Tien Tsin.—The honor of establishing the first medical school, where the healing art will be taught after western models, belongs to Surgeon-Captain F. S. Heuston, of the British Army. The president of the new Medical College is His Excellency the Viceroy Li Hung Chang. The vice-presidents are Sheng Taotai, Lu Taotai, Lohfeng Luh Taotai, and Mr. A. Irwin, F.R.C.S.I. The two last and Dr. Lin Leien Fai are the directors. Mr. F. S. Heuston is the professor, and he is assisted by the following instructors: Dr. Kin, Dr. Chow, and Mr. Li. The dean is Dr. Lin, and the proctor Dr. Kin. The rules, subjects of study, and examinations are comprehensive. Candidates for the degrees in medicine and surgery of the College, before they are allowed to present themselves for the first professional examination, must produce evidence that they have passed a preliminary examination in general education and have been registered as medical students. Before receiving his diplomas to practise medicine and surgery the student must be over twenty-one years of age, and must have successfully passed each of the four professional examinations of the College. There are two sessions: spring (from after Chinese New Year to 1st of July) and autumn (from September 1st to Chinese New Year); and the examina-

tions are held at the close of the latter session. There are four professional examinations, held at the end of each year of study, and directed by a specially appointed Board of Examiners. At least two thirds of the lectures must be attended. Before admission to the second professional examination, evidence must be produced of having attended a medico chirurgical hospital for a period of six months after the first professional examination, and of having taken notes of surgical and medical cases to the satisfaction of the medical officers of the hospital. Attendance at a hospital for six months is also required for the third examination. At the same time the candidate must take personal notes on six medical and surgical cases, which are to be produced for inspection, if required by the professor. A two months' course in the compounding department of a hospital, under a qualified person, is also necessary. The fourth, or degree examination, requires a further six months' attendance at a medico-chirurgical hospital, attendance at the out-door dispensary, and notes, taken daily, on at least five cases of fever (typhus, typhoid or enteric, scarlatina, small-pox, or measles). The candidate must also produce evidence of having attended surgical operations at the hospital, and of having received practical instruction on the treatment of ophthalmic and [illegible] in which The [illegible] survived the dangerous catastrophe of primary tubal rupture, and continues to develop to maturity. The question of the proper treatment of those cases of advanced ectopic pregnancy in which the fœtus is living and viable is still in a somewhat unsettled state, and the cases encountered so rare that the history of every such case forms an interesting contribution to the study of this uncommon condition; and also, especially if successful, assists in the development of a proper technique in its operative treatment. For this reason I will ask your kind attention to the report of the following case. On January 23d I made the following entry in my case-book:

Mrs. F. McC——, referred to me by Dr. Wallace, of East Brady, Pa., aged thirty-five, had one child, nine years old, since which time she remained sterile. Her puerperium was complicated by a slight febrile attack lasting a few days only, after which her convalescence was normal. Health fairly good until three years ago, when

The Collection and Preservation of Anatomical Material.—At the last meeting of the Association of American Anatomists, a committee was appointed to consider the question of the collection and preservation of anatomical material, and to report, at the next meeting, what, in their opinion, are the best means of accomplishing these objects. In order to make the work of the committee as comprehensive as possible, and to obtain information which will be of service in arriving at definite conclusions as to the best methods of accomplishing the purposes indicated in the resolution, it has been deemed desirable to send to the teachers of anatomy, in this country and abroad, a circular letter, with the following questions appended:

1. Is anatomical material obtained in accordance with a legal enactment, wholly or in part? 2. If there is an anatomical law in your country or State, please send a copy of it to the chairman of this committee, Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, Pa. Please state whether the law is satisfactory, whether it is readily obeyed by those upon whom duties are imposed by it, and mention any improvements you would suggest as to its requirements? 3. Is the material received in good condition? 4. What disposal is ultimately made of the remains? 5. Please state what means are employed to preserve anatomical material for the purposes of dissection or operative surgery. If injections of preservative fluids are used, state their composition and the methods of use, at what point injections are made, whether at the heart or in the large arteries, and their effect in accomplishing the preservation, with any changes in the color or character of the tissues. What length of time can material be used in dissection by the methods employed by you? If preservation by means of "cold storage" is employed, please state the cost of the machinery which it was necessary to construct for this purpose, and what means are taken to prevent decomposition after the subject is placed upon the table for dissection. 6. Please state the cost, by the method employed by you, for each subject, (*a*) for receiving it, (*b*) for injecting and preserving it. 7. Do you obtain an adequate supply of material for the purposes of anatomical instruction? How many students are assigned to each subject, and what is the method of allotment? 8. Please give any information which you may deem of importance. As the report will be general in character, the name of the informant or institution will not be mentioned by the committee unless requested.

Education and Crime.—Sir John Lubbock recently addressed the Sociological Congress in Paris upon the effect in England of education upon crime. Since 1870 the number of children in English schools has increased from 1,500,000 to 5,000,000, and the number of persons in prison has fallen from 12,000 to 5,000. The yearly average of persons sentenced to penal servitude for the worst crimes has declined from 3,000 to 800, while juvenile offenders have fallen from 14,000 to 5,000. Sir John Lubbock sees in these figures a confirmation of Victor Hugo's saying, that "He who opens a school closes a prison." In France, according to the Paris *Temps*, criminal statistics and the statements of magistrates show that as schools have been opened prisons have filled, and that the diffusion of education has been accompanied, apparently, with increase of crime, and especially of juvenile crime. In attempting to acccount for this phenomenon the *Temps* points out that in France, under the republic, education is simply intellectual instruction. In England there is not only instruction, but training. Moral and religious influences are brought to bear upon the children.

Bacteriology of Hospital Bed-Cards.—Dr. Trousholiavski, in an inaugural dissertation recently presented to the University of St. Petersburg, gives the results of some curious researches made by him on the bacteriology of hospital case-books and papers. Before use these are almost free from microbes. Old case-books which have been used at the bedside, and have afterward been shut up in drawers from eighteen months to two years, also contain very few microbes. On the other hand, papers which have been close to, or in contact with, patients, yield a large number of micro organisms. In forty-six bed-cards and admission-cards examined for the purpose, the average number of micro-organisms found was 43 per square centimetre of paper. By the side of indifferent micro-organisms, pathogenic microbes such as B. pyocyaneus, the bacillus of tubercle, and streptococci were found. Virulent micro-organisms placed on dry sterilized paper preserved their virulence for a considerable time; the comma bacillus from five to fourteen days, the typhoid bacillus for sixty-three days, the diphtheria bacillus for thirty-eight days, the streptococcus for ninety-eight days.—*British Medical Journal.*

Chicago is Almost the Healthiest City in the World, if its own statisticians and health officers are to be believed. According to a report of the Health Commissioner there is but one city, Berlin, that had a lower death-rate for the year 1893, that being 16.3, while Chicago's rate was 16.9. The population is estimated at over 600,000 above the United States census of 1890, and the area of the city includes a large tract of territory that is practically open prairie, where the death-rate is naturally much below that of cities.

Frost Burns.—In the accidents which have attended the manipulation of liquid air and other substances in his laboratory, M. Raoul Pictet has distinguished two degrees of burns from the intense cold. In the first the skin is reddened, turning blue the next day. The spot doubles in area on the following days; there is intense itching, and five or six weeks are usually required for

healing. In the more severe burns, those of the second degree, the skin is rapidly detached. A long and stubborn suppuration sets in, and healing is very slow, and altogether different from that of burns from fire. On one occasion, M. Pictet, while suffering from a burn due to a drop of liquid air, seriously scorched the same hand. The scorched portion was healed in ten or twelve days, whereas the cold burn was still open six months afterward.—*British Medical Journal.*

Acromegaly and Gigantism.—Dr. Sternberg concluded, at the Congress of German Physicians, that the study of the skeleton of the giant showed that there exists a physiological and a pathological gigantism, and that the latter are cases due almost entirely to acromegaly. He thinks that gigantic growth and acromegaly can exist in the same individual. Twenty per cent. of the patients with acromegaly show evidences of gigantism, and forty per cent. of giants have acromegaly. Gigantic development predisposes to vegetative disturbances, and especially to acromegaly. Enlargement of the thymus he thinks is a part of the natural history of acromegaly. Thyroid feeding was productive of slight amelioration of the symptoms of the disease in one case in which it had been employed.

The Use of Quinine in Influenza.—Dr. Mossé (Academy of Medicine of Paris) concluded from his researches that quinine, when given in moderately large doses, tends to exert a preventive action on the manifestations of influenza infection. In three cases of severe pneumonia complicating the grippe, recovery, which the writer attributed to the use of quinine, resulted.

The Decline of the Pessary.—"No one invents a pessary nowadays, in strange contrast to the time when scarcely a man prominent in the practice of diseases of women did not invent one." One may conclude from this that either all available pessary devices have been invented, or that the use of the pessary is to be discouraged. It is the latter view that Dr. J. G. Blake holds in a communication to the Obstetrical Society of Boston, April, 1894; his alternative for the pessary, is, of course, surgical procedure. His complaint is more of the abuse than the use of the pessary, although he quotes Fritsch, a German writer, who declared that he had spent ten years in learning the treatment by pessaries, and considered it the most difficult in the whole range of gynecology, and that it is easier to perform a laparotomy than to apply an accurately fitting pessary. The same author criticises their use, declaring that the pessary heals palliatively, but injures definitively; for it distends the fornix vagina so enormously, that even after it has been worn for years, a cure is not to be hoped for. On the contrary, retroflexion of the uterus returns after the removal of the pessary. The longer the uterus has been displaced, the longer the time necessary to enable the reflexed ligaments to return to a normal condition; and a few days have been sufficient, after its withdrawal, to have the uterus fall back into its old position. Among the means for attaining permanent cures, Blake mentions narrowing the vagina; pregnancy followed by prolonged rest in bed; dilating and curetting; and shortening the round ligaments. The first, he says, is only called for in complete prolapse, where no instrument, without external support, will keep the uterus within the vagina, but where it can be accomplished by narrowing the canal and outlet: these cases are comparatively rare. The operation of dilating, curetting, and packing is particularly adapted to the cure of anteflexions, and to the removal of enlargements which attend all forms of backward displacement. The combined dilating, curetting, and Alexander, is to his mind the true solution up to date of the vexed problem of backward displacements. Ventral fixation, by opening the abdomen, and by various other methods (the vaginal, for instance) of fastening the uterus, has been advocated by many writers. He sees no advantage in them over the simple, harmless, and in most cases effective, operation in proper cases, and of dispensing with pessaries. He thinks no one has yet devised a simpler, less dangerous, or more effective measure for the emancipation of women from the wearing of pessaries, than the two operations of dilating and curetting, and Alexander.—*Omaha Clinic.*

The Treatment of Basedow's Disease by Thyroid Feeding.—Dr. P. Brund reported at the recent meeting of the Congress of German Physicians (Vienna), that favorable results had followed the feeding of sheep and calves' thyroids in several cases of exophthalmic goitre in which he had followed this plan of treatment. Of 12 cases so treated, 9 showed marked improvement, reaching to cure in some, while 3 cases were not affected. In all cases, with one exception, the treatment was well borne; in this case the sinister symptoms produced were headache, nausea, anorexia, tachycardia, and loss of flesh. The symptoms disappeared when the thyroid feeding was stopped.

BOOKS RECEIVED.

A TEXT BOOK OF PATHOLOGY, SYSTEMATIC AND PRACTICAL. By D. J. Hamilton. (Part II., pages 515 to 1139; also Part I., [illegible] Illustrated. 8vo. Publishers, [illegible] for $

less time, pain greatly diminished, and less hemorrhage in removing the growth. The accompanying cut will show its appearance, and is one-half the actual size of the scissors. This instrument was made for me in a most excellent manner by Feick Bros., 49 Sixth Street, Pittsburg, Pa.

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Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 10, 1894.

PENNSYLVANIA, AT ITS FORTY-FOURTH ANNUAL SESSION. Vol. XXV. 8vo, 442 pages. Published by the Society, Philadelphia, Pa.

POCKET ANATOMIST. By Dr. C. Henri Leonard. 12mo, 297 pages. Illustrated. The Illustrated Medical Journal Co., Publishers, Detroit, Mich. Price, $1.00.

PHYSIOLOGY FOR BEGINNERS. By Dr. M. Foster and Dr. Lewis E. Shore. 12mo, 242 pages. Illustrated. Published by Macmillan & Co., New York City. Price, 75 cents.

HOME TREATMENT FOR CATARRHS AND COLDS. By Dr. Leonard A. Dessar. 12mo, 118 pages. Illustrated. Published by the Home Series Publishing Co., New York City.

DISEASES OF WOMEN. By Dr. H. McNaughton Jones. 12mo, 768 pages. Illustrated. Published by Bailliere, Tindall & Cox, London. Price, 12s. 6d.

ESSENTIALS OF CHEMISTRY AND TOXICOLOGY. By Dr. R. A. Witthaus. 32mo, 314 pages. Published by William Wood & Company, New York City. Price, $1.00.

TEXT-BOOK OF HYGIENE. A COMPREHENSIVE TREATISE ON THE PRINCIPLES AND PRACTICE OF PREVENTIVE MEDICINE FROM AN AMERICAN STANDPOINT. By George H. Rone, M.D. Third edition. Illustrated. Royal octavo, 553 pages Cloth, $3.00. The F. A. Davis Co., Philadelphia, Pa.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS. A MANUAL FOR THE USE OF PHYSICIANS, SURGEONS, AND STUDENTS. By Chas. W. Purdy, M.D. Illustrated. Octavo, 360 pages. Price, $2.50. The F. A. Davis Co., Philadelphia, Pa.

A CLINICAL MANUAL OF DISEASES OF THE EYE, Including a Sketch of its Anatomy. By D. B. St. John Roosa, M.D., LL.D. One volume. 8vo, 650 pages. Uniform with the "Treatise on Diseases of the Ear," by the same author. Illustrated by 178 Engravings and 3 full-page plates (2 in colors). Published by William Wood & Company, New York City. Price, muslin, $5.50; sheep, $6.50.

THE MEDICAL RECORD VISITING LIST FOR 1895.

DIAGNOSIS, DIFFERENTIAL DIAGNOSIS, AND TREATMENT OF DISEASES OF THE EYE. By A. E. Adams, M.D. 12mo, 94 pages. Published by G. P. Putnam's Sons, New York City.

Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 46, No. 21. Whole No. 1255. | New York, November 24, 1894. | $5.00 Per Annum. Single Copies, 10c.

Original Articles.

CŒLIOTOMY IN ECTOPIC GESTATION WHERE THE FŒTUS IS LIVING AND VIABLE, WITH THE REPORT OF A SUCCESSFUL CASE.

By X. O. WERDER, M.D.,

PITTSBURGH, PA.

FELLOW OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS; GYNECOLOGIST TO MERCY HOSPITAL.

Ectopic gestation is still a fruitful and interesting topic for discussion, particularly that rare form in which the fœtus has survived the dangerous catastrophe of primary tubal rupture, and continues to develop to maturity. The question of the proper treatment of those cases of advanced ectopic pregnancy in which the fœtus is living and viable is still in a somewhat unsettled state, and the cases encountered so rare that the history of every such case forms an interesting contribution to the study of this uncommon condition; and also, especially if successful, assists in the development of a proper technique in its operative treatment. For this reason I will ask your kind attention to the report of the following case. On January 23d I made the following entry in my case-book:

Mrs. F. McC——, referred to me by Dr. Wallace, of East Brady, Pa., aged thirty-five, had one child, nine years old, since which time she remained sterile. Her puerperium was complicated by a slight febrile attack lasting a few days only, after which her convalescence was normal. Health fairly good until three years ago, when she was under treatment for some uterine affection, of which she was relieved until August of last year. Menses regular, duration one week, moderate in quantity, accompanied by some pain, especially in her back; rarely cramps. Last regular menstrual period began July 16, 1893. In August they were delayed one week, and when they returned they lasted fully six weeks, but never profuse. During the first three or four weeks she was able to be on her feet, though she complained of some occasional pains, was sick at the stomach, and felt weak. In the latter part of September she was suddenly seized with very severe cramps and a feeling of faintness, which returned in paroxysms for several weeks, confining her to bed for at least six weeks. In the early part of November she was able to leave her bed for short periods, but was unable to be about until Christmas. She is still very weak, anæmic, and emaciated, and has pains in her abdomen, especially in her left side and in her back. Her menses have never reappeared since October; no leucorrhœa; bowels obstinately constipated. Micturition frequent, sometimes accompanied with bearing down pains. Appetite poor. Since Christmas she has noticed an enlargement of her abdomen, especially on her left side.

The lower part of her abdomen is enlarged by a tumor of the size of a five or six months' pregnancy, two-thirds of which occupies the left side and extends to a line midway between symphysis pubis and umbilicus, which is tender on palpation. Distinct fœtal movements can be felt, but the heart-sounds are inaudible. The breasts have become enlarged lately and present the characteristic appearances of pregnancy. The external genitalia show the peculiar discoloration of pregnancy to a slight degree. The cervix presents a bilateral laceration to the vaginal fornix; it is soft and patulous. To the left of the cervix, pushing the uterus over against the right iliac bone, is the tumor, reaching low down into the pelvis and filling out Douglas's space. The uterus in its lower two-thirds can be felt distinct from the tumor and is enlarged, and when under the influence of an anæsthetic, the following day, the upper third or fundus could be palpated; but the internal or left cornu and the border of the body seemed to merge into the tumor to such an extent that they were unrecognizable to the palpating finger. The examination without anæsthesia was very painful, and she seemed unusually sensitive about her pelvis.

The diagnosis made was ectopic gestation at six months with a living fœtus, which was subsequently confirmed by my friends Drs. F. Blume, J. J. Buchanan, and John M. Duff. The patient was advised to remain at the hospital, where she could be under constant surveillance and receive prompt attention should occasion demand it. In spite of our earnest solicitations she went home, a distance of seventy-five miles, but was prevailed upon by Dr. Wallace to return a month later. An examination corroborated our former diagnosis, and also noted a perceptible increase in the size of her abdomen. She had suffered less during the last month than previously, and her general health had improved. She remained now at Mercy Hospital for six weeks, going about her room and through the building, and enjoying fairly good health, though she complained of a more or less constant soreness in her abdomen. It was decided to defer operation to about two weeks previous to the end of her term, unless some change in her condition should demand earlier interference.

After the usual preparations the operation was performed April 4th of this year, at Mercy Hospital, in the presence of over twenty physicians. Having placed her on the operating-table another vaginal examination was made, when a finger could be introduced into the uterus up to the fundus without any difficulty, proving conclusively that the uterus was empty. The incision was made in the median line and a yellowish-white cystic tumor was exposed. As the placenta at previous examinations had been located a little to the right of the median line, the sac, the walls of which were very thin, was opened cautiously by a small incision a little to the left of its centre, through which at once the child's scrotum prolapsed. The opening was rapidly enlarged with the fingers, the feet seized, and the child extracted. The head was in the left iliac fossa, with the occiput and back pointing to the spinal column. Only a few drops of amniotic fluid escaped from the sac; the child had no other fœtal covering except the cyst-wall. The anterior surface of the cyst was perfectly free from adhesions, but above and on the left side of the sac numerous loops of intestines were found adherent; on the right it terminated between the folds of the broad ligaments at the uterus, which was enlarged to the size of a two months' pregnancy. It was decided to extirpate the sac if at all possible, and separation of the intestinal adhesions was therefore begun, when all at once a terrific hemorrhage from the bottom of the sac, evidently the placenta, put a sudden stop to our efforts. While my assistant used sponge pressure, I rapidly clamped the ovarian artery in the infundibulopelvic ligament very close to the ileum, and with another forceps compressed the branches of the uterine artery along the left border of the uterus, which at once controlled the bleeding. The placenta, which was spread out over the spinal column and the right posterior wall of the pelvis, and adherent to intestines only by a small portion of its upper margin, could now be separated with comparatively

little loss of blood. It was of rather larger size than an ordinary placenta, and devoid of any fœtal membranes. Another effort was now made to peel off the very thin cyst-walls from the intestines, but the adhesions were firmer than the membranous sac-wall, which tore at every such attempt, and was therefore abandoned. The free portion of the cyst was now excised, the ovarian and uterine arteries compressed by clamp forceps, tied with strong silk ligatures, the forceps removed, and the remainder of the sac gathered and drawn together by silk sutures attached to the parietal peritoneum, the cavity packed with a Mikulicz dressing of iodoform gauze, and the abdominal incision closed, as far as the gauze dressing permitted.

The child, which at first was considerably asphyxiated, soon responded to the efforts of resuscitation made by Dr. J. M. Duff, and seemed hearty, strong, and well developed, though sadly deformed. There was marked asymmetry of the head and face; it had club feet, and on the left side of the thorax there was an ulcerated surface about an inch square, probably produced by the pressure of the left elbow against that side of the body. The first two days it seemed to be thriving; it took its nourishment—sterilized milk—readily, but on the third day it became very restless, its breathing was rapid, and the temperature 104° F., in which condition it continued until it died, four days after birth. The cause of death was supposed to be pneumonia, but no autopsy was held.

The patient rallied well from the operation, and the convalescence progressed very favorably and smoothly, and she never gave rise to the slightest anxiety. She was discharged from the hospital perfectly well, excepting a small fistulous opening in her abdominal wound, and has remained in excellent health ever since, as a letter received from her a few weeks ago indicates, though she has never menstruated since last October.

Anatomically, the case was undoubtedly one of tubal pregnancy primarily, with rupture between the folds of the broad ligaments; but that it was not a purely intraligamentous pregnancy was shown by the fact that a part of the sac seemed to be formed of amnion only. There must, therefore, have been a secondary rupture during the course of pregnancy, at which the largest portion of the ovum became extruded into the abdominal cavity, while a part still continued to develop within the broad ligaments. When this secondary rupture occurred is not clear from the history of the case, but I am inclined to the belief that it happened early during her gestation, as there were no symptoms pointing to any such accident after the sixth month.

In looking over the literature of this subject I have been able to find sixteen successful cases of cœliotomy for ectopic gestation with living fœtus at or near term, not counting my own, the operators being Jessup, A. Martin, John Williams, J. Lazarewitch, August Breisky, Hector Treub (two cases), Joseph Eastman, R. Olshausen (two cases), Carl Braun von Fernwald, G. Rein, John W. Taylor, Professor Schauta, Mordecai Price, and William T. Lusk. In Schauta's and Lusk's cases the operation was performed before viability of the child, namely, at the end of the sixth month, but as the technique is the same as at the end of term, I have included them in my list. In eleven, or with my own, in twelve cases, the placenta was removed at the time of operation with complete or partial enucleation of the sac, namely, by Martin, Lazarewitch, Breisky, Treub's two cases, Eastman, Olshausen (one case), Carl Braun, G. Rein, Schauta, and Lusk; in the others the sac and placenta were left and drained. The latter class of cases had, without exception, an unusually stormy and protracted convalescence, complicated by sepsis, venous thrombosis, etc., so that Lusk very properly remarks that the "fortunate results belong to the domain of miracle and do not invite to imitation," while the cases with removal of placenta, particularly those in which the whole sac could be enucleated, made uneventful and speedy recoveries.

The gravest element of danger in removing a living placenta is, as is well known, uncontrollable hemorrhage, which has induced many of the older operators to postpone operation until after the death of the fœtus, because after the placental circulation has ceased the risk from hemorrhage is comparatively slight. Though this method finds a few advocates even at the present time, the fear of sepsis in the ovisac, which so frequently follows the death of the fœtus, aided by a commendable desire to save the child's life, has undoubtedly been working a rapid change in favor of operative interference during fœtal life, especially as this has been justified by the more favorable results obtained in this operation during late years by an improved technique.

The blood supplying the placental circulation must, undoubtedly, be derived mainly from the ovarian artery and its anastomosing branches of the uterine artery. That these are the principal feeders was well shown in my case, in which compression of these arteries checked an alarming hemorrhage at once. Just as conclusive an example of the correctness of this anatomical fact we have in a case reported by Sippel,[1] in which he enucleated an ectopic sac at seven months, with a living child, with comparative ease, until it tore at the placental insertion, followed by a very profuse hemorrhage which compression of the placenta did not affect, but which promptly ceased after ligation of the ovarian artery—unfortunately too late for the patient, who succumbed to the acute anæmia one hour after operation. He strongly emphasizes the importance of securing the ovarian artery previous to the removal of the placenta. Olshausen and Breisky also call particular attention to this point in the technique of this operation, which has been followed by Lusk and Schauta. On account of the very extensive anastomosis of the internal ovarian with the uterine artery it seems safer to me to ligate both vessels, as done in my case. If further experience bears out the correctness of this view in regard to the relation of these blood-vessels to the placental circulation, an important advance will have been made in the technique of this operation, and the cases in which, at least, the placenta cannot be removed will be very exceptional, and limited to that class in which it has formed extensive intestinal adhesions. Considering the great danger of packing and draining, usually practised in such cases, it would seem preferable to me to leave the placenta without drainage, sealing up the abdominal wound hermetically. That the placenta can become absorbed, if undisturbed, is demonstrated in those cases in which the fœtus has died, and in which everything has disappeared excepting the fœtal bones. Braithwaite[2] reports a case in which the placenta was left and nothing escaped from the abdomen subsequently except a very small piece. Dr. Austin Lawrence reports two cases before the British Medical Association, held at Bristol, 1894,[3] in which he left the placenta; in one case it was absorbed, in the other the patient died from septicæmia on the twenty fourth day. He advises leaving the placenta, but reopening the abdomen if symptoms appear. Cullingsworth, at the same meeting, narrated a similar case, with living child, in which the opening in the membranes was sutured and the cord cut short. There was satisfactory progress for three weeks; on the twenty fourth day, however, a rigor occurred, and on the twenty-sixth he reopened the abdomen and found purulent fluid in the remains of the amniotic sac, which he washed out, but the patient died the same day. At the autopsy he discovered that there was no suppuration in the substance of the placenta, but the sepsis arose from the remains of the amniotic sac, which being of non-vascular tissue, was more likely to decompose. He advises, therefore, to leave the placenta, allowing it to bleed from the divided end of the cord, so as to lessen its size; to cut the cord quite close to the placenta, and to remove all the amnion possible, stripping it off from the placental surface, and to reopen the abdomen at once

[1] Centralblatt für Gynäkol., 1892, p. 992.
[2] Transactions of the London Obstetrical Society, vol. xxviii., p. 33.
[3] MEDICAL RECORD, New York, September 1, 1894.

	Date of Operation.	Name of Operator.	Age.	Number of Pregnancies Preceding.	Period of Gestation.	Result to Child.	Details of Operation.	References.
1	Aug. 14, 1875.	Mr. T. R. Jessup, Leeds, England.	26	1	33d to 34th week.	Living, but died at eleven months from croup.	Placenta not removed; no sac, fœtus free in abdominal cavity among intestines.	Tait on Diseases of Women and Abdominal Surgery, vol. i, p. 495.
2	July 9, 1881.	Dr. A. Martin, Berlin.	39	2	7 months.	Alive, cord pulsating, but did not breathe; had a large encephalocele.	Placenta removed after ligation at three points.	Berlin. klin. Wochenschrift, December 26, 1881. R. P. Harris, Extra-uterine Pregnancy, Am. Jour. of the Med. Sciences, September, 1888.
3	June 6, 1885.	John Williams, London.	30	1	35th week.	Died in a few minutes.	Placenta not removed, sac drained.	Brit. Med. Jour., December 5, 1887. R. P. Harris, ibid.
4	Nov. 4, 1885.	J. Lazarewitch, Kharkof, Russia.	27	1	9 months.	Lived 26 days.	Placenta and cyst drawn out, pressed up in the abdominal wound; ligated and large portion removed.	Vrach, St. Petersburg, 1886. R. P. Harris, ibid.
5	May 29, 1887.	Hector Treub. Leyden.	34	1	2 to 3 weeks before end of term.	Living, weight over 4 pounds. A year later a strong, healthy boy.	After incision of the sac, which bled freely, placenta was perforated with hand, and after extracting child bleeding was controlled by compressing each half of placenta by the hand of operator and assistant until removed; portion of sac extirpated, the rest intimately adherent to intestines, sewed to abdominal wound and packed with Mikulicz dressing. Supposed to have been an ovarian pregnancy or a pregnancy in tubo-ovarian cyst.	Zeitschrift für Geburtsch und Gynäk., Band xv., p. 384, 1888.
6	Oct. 29, 1887.	Aug. Breisky, Vienna.	39	..	End of 8th month.	Alive and well, weight 5 pounds, but died 3 weeks later from phlebitis of umbilical vein.	Tubal intra-ligamentous pregnancy. After removing child from the sac, the latter was drawn out, ligated at its juncture with the uterus and removed, containing placenta and membranes, and cavity drained. Mother recovered perfectly in three weeks.	Wiener med. Wochenschrift, 1887, Nos. 48, 49, and 56; and J. Eastman in Am. Jour. of Obstet., vol. xxi., 1888.
7	July 10, 1888.	Joseph Eastman, Indianapolis.	39	1	7 months.	Living, weight 4 pounds. Died at 8½ months from pneumonia.	Intra-ligamentous tubal pregnancy. Clamped uterine end of tube and broad ligament, and enucleated fœtal sac containing placenta intact, and quilted the pedicle with cobbler's stitch, using iron-dyed silk.	Am. Jour. of Obstet., 1888, p. 929.
8	Nov. 1, 1888.	R. Olshausen, Berlin.	30	1	9 months.	Living, weight 5 pounds. When a year old weighed 14 pounds.	Fœtus free in abdominal cavity, also largest part of placenta, between loops of intestines; the latter adherent to right broad ligament with only about one third of its periphery. This last portion was easily surrounded and proved so thin that two mass ligatures of silk were sufficient to securely tie off the placenta with attached portion of broad ligament. Only shreds of fœtal membranes were attached to placenta.	Deutsche med. Wochenschrift, 1890, p. 171.
9	Feb. 11, 1889.	Carl Braun von Fernwald, Vienna.	..	2	End of term.	Living, weight over 6 pounds. Died 72 hours after birth from lobular pneumonia due to inspiration of amniotic fluid.	Child free in abdominal cavity, placenta adherent to posterior surface of uterus and right broad ligament, extends deep into Douglas's cul-de-sac, and firmly attached to descending colon. After ligating right broad ligament in number of places, placenta can be detached in a number of places without much hemorrhage. But removal of sac necessitated elastic ligature around uterus to check bleeding and supra-vaginal hysterectomy.	Archiv für Gynäk., Heft ii., 1890.
10	Feb. 27, 1889.	R. Olshausen, Berlin.	32	4	9 months.	Alive, but very much deformed. Died ½ hour after birth.	Sac and placenta left undisturbed and drained with iodoform gauze packing. Spontaneous expulsion of placenta on thirty-fourth day. Interesting is the daily copious discharge of fluid per vagina during the eighth month, which was undoubtedly amniotic fluid draining away through tube. No amniotic fluid present during operation.	Deutsche med. Wochenschrift, 1890, p. 171.
11	Feb. 4, 1890.	G. Rein, Kiew, Russia.	35	..	37th week.	Living, weight 6 pounds; slight asymmetry of head. Two years after operation was hearty and well.	Intra-ligamentous tubal pregnancy. Sac, placenta, and fœtal membranes removed entire by enucleation from the peritoneum, in the same manner as practised in removal of intra-ligamentous ovarian cyst.	Centralblatt für Gynäkol., No. 50, 1892.
12	1891.	John W. Taylor, Birmingham, Eng.	..	..	9 months.	Living.	Fœtus free in abdominal cavity, placenta left behind and drainage-tube introduced, and umbilical cord drawn out of the lower angle of the wound. Patient recovered after very protracted convalescence complicated by sepsis, thrombosis of left iliac, the inferior cava, the right iliac and right renal veins.	Obstet. Trans. of London for 1891, p. 1151, and Wm. T. Lusk in New York Jour. of Gynecol. and Obstet., July, 1893.
13	Jan. 10, 1891.	Prof. Schauta, Vienna.	..	..	7 months.	Living.	After tying ovarian artery at the peritoneal fold, which constituted the residue of the ligamentum infundibulo-pelosium, he incised the peritoneal covering in a circular line corresponding nearly to the largest circumference of the sac. The enucleation of the latter was readily accomplished without rupture of sac-walls. Considerable hemorrhage resulted from detachment of the ovum from the uterus, which was temporarily controlled by pressure and later by sutures. The peritoneal borders of the cavity were then sutured to the parietal peritoneum, and the cavity itself was drained by a Mikulicz tampon.	Beiträge für Casuistik Prognose und Therapie der Extra-Uterine Schwangerschaft, Prag, 1891; and Wm. T. Lusk in New York Jour. of Gynecol. and Obstet., July, 1893.
14	Oct. 23, 1892.	Dr. Mordecai Price, Philadelphia.	..	..	.....	Living.	Placenta attached to uterine attachment of left tube and the entire pelvic viscera of the left side from the spine at the back, and extending up to the kidney and covered the descending colon. It was slightly wounded in the abdominal incision and the cause of considerable hemorrhage; this was controlled by clamping forceps, which were allowed to remain until first dressing. The child was enveloped only by amniotic sac, to which were attached the transverse colon and also small intestines to a slight extent. Placenta left and sac packed with iodoform gauze. Last portion of placenta removed on thirty-fifth day.	Transactions of the State Medical Society of Pennsylvania, 1893, p. 152.
15	Aug. 19, 1893.	Wm. T. Lusk, New York.	33	1	6 months.	Lived 24 hours.	Pregnancy started in right tube and subsequently developed to a great extent between the folds of broad ligaments. Tied ovarian and uterine arteries of right side, and then enucleated entire sac with placenta.	Wm. T. Lusk, Technique of Primary Cœliotomy in Advanced Ectopic Gestation, in N.Y. Jour. of Gynecol. and Obstet., July, 1893.
16	1894.	Hector Treub, Leyden.	..	..	3 weeks before term.	Lived several weeks.	Fœtus free in abdominal cavity. Supra-vaginal amputation of uterus; removal of placenta and sac. (Private communication from R. P. Harris.)	Bulletin Mem. Soc. Obstet. et Gynecol. de Paris, 1894.
17	April 4, 1894.	X. O. Werder, Pittsburgh.	..	1	2 weeks before term.	Lived 4 days.	Child enveloped in amniotic sac and also partly by folds of broad ligaments. Placenta removed after clamping and subsequently tying ovarian and uterine arteries of left side. Part of sac incised, but portion had to be left on account of firm intestinal adhesions. Edges of sac and stump of left broad ligament drawn together by sutures and attached to parietal peritoneum, and drained by Mikulicz gauze packing.	

should septic symptoms appear.[1] In addition to lessening the size of the placenta by allowing it to bleed from the severed cord, I would suggest to tie the ovarian artery on that side, and by so doing its blood-supply would be greatly diminished, though sufficient circulation would remain from the adhesions to keep it alive. Considerable shrinkage of the placental tissues would, no doubt, follow this interference with its normal circulation, and absorption could take place more readily. The method of leaving the placenta and sac and draining it, causing them to slough out, is certainly such an unsatisfactory procedure, fraught with the greatest risk to the patient, that it has little to recommend itself, and I feel confident will have no place in the future treatment of these cases.

The time of operation in advanced cases of ectopic gestation with a living child, is still a matter of discussion. In my case I followed the advice of Tait,[2] who advises the careful guarding and watching of the mother, though I did not go as far as he, to wait until false labor sets in before operating. Werth and Olshausen,[3] on the contrary, advocate operation regardless of the child's life, from the fact that such children only very rarely live long after birth; the latter says, "on the mother's account it is wise to operate as soon as possible, because every delay is apt to become dangerous, and in intraligamentous pregnancies the technical difficulties will only increase." While no doubt the welfare of the mother is first in importance, we owe some consideration to the life of the child, and I think we are justified in postponing operation in the interest of the child, providing we do not jeopardize the chances of the mother thereby. We should, therefore, be largely guided by the condition of the mother; she should be carefully watched and prepared for emergencies, but as long as no untoward symptoms require prompt interference, the period of viability should be waited for. In a similar case, however, I would not postpone operation much beyond viability, but would perform cœliotomy between the seventh and eighth months, in order to save the mother a long, anxious suspense, and because the child would be smaller, and therefore, especially in the absence of amniotic fluid, less subject to compression and consequent deformity.

It is a matter of considerable interest to ascertain the fate of the ectopic children which were delivered alive. I have been able to obtain the record of 40 such children. Eighteen of these died within a week after birth; 5 within a month; 1 died at six months, of bronchopneumonia; 1 at seven months, of diarrhœa; 2 at eleven months, 1 from croup, in the other, cause not given; 1 at eighteen months, from cholera infantum—making a total of 26 deaths, and leaving 14 children to be accounted for. Of these, 5 were reported as living and well after operation, with no subsequent report; 1 was strong and healthy after three weeks, but no report since; 1 was well at six months, then lost sight of; 1 well at last report; 2 live and are well at one year; 2 living and well at two years; 1 (Beisone's case) well at seven years; and 1 (Tait's case) well at fourteen and a half years. In regard to the latter, Dr. R. P. Harris has kindly furnished me the following interesting information: The child is Marian Sylvester, who is in good health and has grown to be quite a comely girl, living near the Woman's Hospital in Birmingham. Her mother, Mary Ann Sylvester, was thirty-three years of age at the time of operation; pregnancy in right broad ligament; she died on February 4, 1880. Operation, January 31 (Tait), or Sunday, February 1, 1880 (Savage).[4]

The greatest mortality of ectopic children occurs, therefore, during the first few days after delivery, almost fifty per cent.; of 22 surviving that period, 8 are known to have died within the first year and a half; 5 cases were said to be strong and healthy at birth, but no subsequent report. Five lived from six to eleven months; 5 from one to two years; two, seven and fourteen and a half years, respectively.

While this table does not present a very hopeful prospect for the saving of ectopic children at a viable period, the fact that some of them have survived the most dangerous periods of childhood, more than justifies us, in my opinion, to postpone operation until the viability of the child has been reached in all those cases where we can do so without danger to the mother.

The list appended contains all the successful cases of cœliotomy for advanced ectopic gestation with living children which I was able to find in literature up to the present time, with such important data as may prove of interest in connection with the report of this case.

[1] MEDICAL RECORD, New York, September 1, 1894.
[2] Diseases of Women and Abdominal Surgery, p. 516.
[3] Deutsche med. Wochenschrift, 1890, p. 195.
[4] Tait operated on but one ectopic case in which the child lived. The boy seen in Tait's house, and generally regarded as an ectopic child, is Hemlingford Powell, son of Elizabeth Powell, delivered by Cæsarean section on October 11, 1881—a private case, delivered near Tait's house. Woman died; boy, believed to be now living, was seen last at Tait's, in December, 1892. The confounding of these two cases lies at Tait's own door. This boy became ectopic, and the girl was not mentioned.—R. P. Harris in private communication.

A CONTRIBUTION TO THE STUDY OF THE ETIOLOGY OF TUBERCULOSIS.[1]

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In the light of the masterly discussion upon the etiology of tuberculosis by Professors Gibbs, Vaughan, *et al.*, at the recent meeting of the Michigan State Society, to which many of us had the pleasure of listening and which it will soon be our privilege to peruse at leisure, in the volume of the Transactions of the Michigan State Medical Society, 1894, the remarks and suggestions which I offer for your consideration this evening will possibly seem very like a repetition, in which much of the more delicate definition and technique is lost, and only the grosser and possibly more superficial elements are preserved.

The case which I shall report, however, has in some of its features such a direct bearing upon this subject of etiology that I am induced to submit it for your discussion, together with my interpretation of the evidences deduced, from the clinical as well as the pathological aspects of the case, which, I am convinced, are in support of the theory of the bacteriological origin of the disease in question. A theory to which the great majority of modern pathologists incline, and one which would have little or no opposition were it not for such indefatigable observers as Professor Gibbs and Dr. Shurley, who, when least expected, and when scepticism has been lulled by the constantly accumulating proofs on the part of the German school, published reports, the results of their observations and experiments, well calculated to stagger confidence in preconceived ideas and shake the faith of any save the most persistent germ theorist.

At best, it seems to me, we are still groping in the dark for the missing links, which shall, when found, connect the bacillus tuberculosis in an intelligible manner with the morbid processes of phthisis and make complete the fabric of our etiological scheme. I believe that these "links" exist, and will sooner or later be discovered and understood. But whether as a result of the efforts of the microscopist or of those of the physiological chemist, it remains to be seen.

That the bacillus itself is not the absolute and direct cause of those earlier changes in the parenchyma of the lung, which if unchecked, lead on to cavity, I think all must concede, in view of recent investigation, which has established by repeated experiment two facts which seem to me to be insurmountable objections to the theory of the direct relationship existing between the bacillus and the destruction of tissue, even to the most sanguine champion of the renowned Koch.

1. In the earliest stages of tuberculosis, the hyperplastic interstitial tissue, while clearly showing the presence of

[1] Read before the Grand Rapids Academy of Medicine, May 28, 1894.

an inflammatory condition characteristic of tubercle, and while still having present all of the other elements found in any stage of the series of changes which follow, except, perhaps, pus, does not invariably contain the bacillus until the degeneration of the infiltrated tissue supervenes. Since, therefore, the bacillus is not necessarily present, it cannot be the direct and only cause of the localized hyperplasia which constitutes the tubercle.

2. Tubercle bacilli can be produced by repeated cultures which, apparently possessing all of the characteristics of the specific micro-organism in question, are inert to cause the disease, even when inoculated into the most susceptible animals.

This is not quite so convincing an argument when taken alone, for it can easily be imagined that in the process of artificial cultivation the bacillus may lose its virulency; but taken together the two facts mentioned offer an argument which cannot well be met on the theory of the bacillus itself being the direct cause of the first morbid changes.

On the other hand, I am thoroughly convinced that the bacillus is the ultimate and essential factor in the production of tuberculosis; that without its agency, no matter how predisposed by heredity, cachexia, or diathesis one may be, one can never develop tuberculosis. The exact nature of that agency, however, and the rationale of its action are still subjects for speculation.

In considering the few points which I wish to discuss here, it will be necessary to call attention to one or two etiological factors, which, I think, are pretty generally established.

1. Phthisis involves, necessarily, a predisposition to the disease, either by an inherited tendency or an acquired cachexia, constituting what may be termed a pre-tuberculous state.

2. The disease itself arises from causes which invariably originate outside the body, and

3. Tuberculosis in its incipiency is never a local manifestation of a general disturbance, but is, in the first place, a purely local lesion.

This theory is fully as tenable as that of the local origin of cancer. The encroachment of the disease from its local origin, however, is so very insidious and the symptoms arising from the local disturbance so masked by those arising from the early absorption of the specific poison generated, and which are the expression of its effect upon the vasomotor system, that it is not strange the theory is slow to gain credence. That such a theory, however, if generally adopted, would have a material bearing upon our treatment of the disease, must unquestionably be conceded.

The communicability of phthisis from the sick to the well is no longer a question, and I am lately advised that in many parts of the country health boards and railroad managements require the same precautions to be taken, with respect to the shipment of bodies of persons dying of phthisis, as with those in which death has resulted from any other of the infectious diseases. How far this course is justifiable I am not prepared to say; but in my opinion, if some like precaution could be taken in the transportation of the many thousands of tuberculous patients who migrate semi-annually throughout the country, it would be serving a far more reasonable purpose; and while we might not, for many years to come, be able to estimate with any degree of certainty the value of such a precaution, the end, I am sure, would justify the means.

Arguing, then, upon the premise that tuberculosis is communicable, we have arising at the start, three questions: 1. What is the direct agent of communication? 2. What is the vehicle or medium of that agent; and 3. How does that agent reach the point at which the first serious pathological changes take place, viz., the interstitial tissue of the lung.

This last consideration, I am aware, has really more to do with the subject of the pathology than that of the etiology, but may with propriety, perhaps, be touched upon in this article.

In answer to the first question, it may be said that while at present we have no positive proof that the bacillus may not, in some instances, itself be the immediate irritating presence which causes the infiltrated deposit of tubercle, we do know pretty conclusively that certain matter which contains absolutely no bacilli, is capable, when inoculated into the bodies of susceptible animals, of producing morbid changes identical with tubercle, and furthermore, that the pathological product thus generated, does not, at first, at least, contain bacilli, but simultaneously with the breaking down of this new tissue, appear the bacilli. Thus some of our most conservative observers still incline to the belief that the bacillus is the effect and not the cause of the disease.

Without entering into an exhaustive discussion upon this question, I may say that I am induced to take the following view of the subject; *i.e.*, the mature bacillus itself is not the immediate irritating presence; neither is any ptomaïne to which its existence and presence give rise, the direct cause for which we are searching; but, those forces upon which are dependent the growth and development of the spores of the micro-organism in question, require and necessitate that hyperplasia, degeneration, and ulceration which constitute the tuberculous process, and that each step of this process, as it were, marks a certain stage of embryonic development on the part of the bacillus. Furthermore, if this process of infiltration of hyperplastic tissue be positively arrested for a sufficiently long time, the spores become devitalized and the bacillus never develops. Thus it is seen often in sections made in hyperplastic lung tissue in close proximity to a softened tuberculous mass, swarming with colonies of bacilli, absolutely no bacilli are to be found, and yet the appearance in every other respect is pathognomonic of the specific disease. With this in view, it is still an open question whether certain agents, not necessarily germicides, but exercising a specific action upon the interstitial tissue by preventing or aborting the hyperplasia, would render impossible the conditions upon which depend the development of the bacillus. I very much doubt if the mature bacillus itself ever gains access from without, through any natural channel, to those points where tuberculous disease apparently originates. It seems to me far more reasonable to suppose that the spores deposited in the epithelial layer of the lining membrane of the bronchioles and terminal vesicles are absorbed by the lymphatics and conveyed to the contiguous connective tissue and undergo development, either along the course of such absorption or in tissue immediately adjacent.

In short, that if bacilli exist in the infectious matter received, that particular generation of bacilli never reaches a point further than the epithelial lining, and only the infinitely minute spores which are beyond the possibility of demonstration, by the microscope, at least, reach the point at which subsequently the tubercle appears.

In answer to the second question, it is only necessary for us to consider what is generally conceded to be the common source of infection; viz., the sputum from persons or animals suffering from tuberculous disease of the lung, and to this may be added the various excreta from those in whom the disease is located at points more or less remote from the lungs. Thus the urine, the seminal fluid, the fæces, and in some instances even the perspiration, might be, under favoring conditions, the vehicle of infection; and here again, it is worthy of consideration that it is by no means necessary that the material of infection contain one single bacillus sufficiently developed to be recognizable as such. Of course the sputum from tuberculous patients in the vast majority of instances contains colonies of bacilli, easy enough of demonstration, and naturally such a product is much more infectious than that which contains only the elementary molecules, simply, however, because in it there is correspondingly a greater quantity of infection.

The manner in which the infectious material is most

commonly conveyed to the vulnerable parts of the susceptible individual in the case of pulmonary tuberculosis, is generally thought to be by means of dust, which has either been in contact with, or is made up in part of, the expectorated matter from the unfortunate sufferer.

We have no proof, however, that the vapor in the expired air may not contain infectious molecules, and although the probabilities are against it, I think we are justified in exercising precautions with respect to its possible conveyance in that way. It is an interesting question, and one which has a very practical bearing, just how long matter which in the first place is highly infectious, can retain its virulency. Experiments with a view to determine this question have recently been made, and I have been surprised to be unable to find an instance where such experiments have proved that tubercle bacilli, in a non-parasitic state, have retained their virulency for a period of six months. In a series of experiments conducted by Dr. G. A. Heron and Dr. T. H A. Chaplin (London *Lancet*, January 6, 1894), both of the City of London Hospital for Diseases of the Chest, a number of guinea pigs (the number is not given) were inoculated with tuberculous sputum three months old. Most of the animals died from septicæmia within a week after the operation. The few that survived were in due time killed by chloroform, and of these not one showed any signs of having developed tuberculosis. The authors in this instance regret that the number was too small to be a very valuable addition to statistics, but thought it remarkable that two months after inoculation with stale sputum three months old, in which colonies of bacilli swarmed, five guinea pigs were free from tuberculous disease.

My third question is answered in part with the first. The spores having found their way into the epithelial lining of the mucous membrane, are with more or less avidity, according to the subject, taken up by the lymphatics and carried to and deposited in those parts for which they appear to have a peculiar predilection, naturally locating in that particular part best suited for the conditions which their development necessitates and always as near as possible to the seat of absorption. Thus in the bronchial glands the interstitial tissue of the lung, the mesenteric glands, the lymphatic glands, points in and about certain of the bony articulations, the testicles, etc.

The case which I cite illustrates to a certain extent, I think, some of those features in the early history of the development of phthisis which have been and are still obscured in the uncertain light of speculative theory.

It is one of acute tuberculosis, and the short time which elapsed from the development of the earliest symptoms to its termination, the rapidity with which the several stages supervened upon each other, and my constant association with the case, all conduced to make my opportunities for close observation rather unusual in the experiences of private practice.

The patient, a young man, aged twenty one, medium height, of better than the average physical development, owing perhaps to a military training, which he had recently enjoyed, consulted me first, on December 5, 1893, having been placed in my care by his family physician. He was unmarried and his occupation was that of a clerk in a dry-goods establishment. A Canadian by birth, of Irish extraction.

Family history: Father and mother, paternal grandmother, five sisters and one brother living, all in apparently good health. The others of his grandparents died at old age, and none from any lung disease, as far as could be learned. One younger brother died about a year previous from phthisis; the last few months of whose illness were passed in the same house and in ordinarily close intimacy with the patient. The habits and hygienic surroundings, which form no inconsiderable factor in the etiology of phthisis, were in this case as follows: The patient, occupying alone a small but comfortable room at home, was surrounded with all the necessities of life and those of the luxuries which over-fond parents and a very moderate purse could bestow upon a favorite child. The house, isolated from its neighbors and situated upon a hill, had all the advantages of light and pure air; but, on the other hand, ranged against these, as it were, the patient himself had lived a life of dissipation in late and irregular hours, sexual excesses, and indiscretions in the matter of food and drink for a number of years prior to the inception of the disease; and thus a constitution, which might otherwise, perhaps, have withstood the encroachments of the disease, or at least have so mitigated its course as to have prolonged life, by making the conditions essential to the acute form impossible (when, to theorize, the case might have been one of the ordinary form or, what is possible, that variety known as fibroid phthisis), was undermined and the powers of resistance were greatly enfeebled. The history given was in brief as follows:

The general health had always been good, save for a tendency to contract influenza upon the slightest exposure, which had been noticeable for several years. In the summer of 1892 the patient had malarial fever. For about a month, however, he had noticed a more or less persistent cough, especially annoying in the morning, unproductive of expectoration; but four days prior to my examination an acute exacerbation of the cough, together with severe laryngeal symptoms, had supervened and now appeared a very slight expectoration of tenacious mucus, which, on one occasion after smoking, had been streaked with blood.

Physical examination revealed the following signs: Temperature, 98.6° F.; pulse, 80; respiration, 24.

The pharynx and larynx showed evidence of intense congestion. The membrane was hyperæmic and the vocal bands could not be distinguished by difference of color from the adjacent walls. Speech, above a whisper, was impossible. Inspection and palpation of the chest gave negative results, while percussion elicited a barely perceptible dulness over the left apex, by no means sufficient of itself to go far toward establishing a diagnosis. Auscultation revealed a somewhat prolonged expiratory sound, a slight increase in vocal resonance, and just a perceptible lessening of the normal vesicular murmur. On the 5th, 8th, and 13th of the month the expectoration was saved from six o'clock at night to eight o'clock on the following morning and carefully examined with the microscope. As many as ten mounts were made from each of the first two specimens and in none were any pathological elements to be found. Meanwhile, the inflammatory condition in the pharynx and larynx subsided without ulceration. From the sputum of the 13th several mounts were made, and owing to a mere chance of staining, I believe, the specimen was obtained which was the only one of the whole number of mounts which showed the existing condition, and I therefore attribute my success in this instance to some fortunate accident in the process of staining. There was no pus present, and no free bacilli. Throughout the whole specimen the same condition existed, and so far no yellow elastic fibres were to be found. In some of the other mounts epithelium cells were present. Indeed in very few were they absent; but in none could the presence of bacilli, either free or, as in this particular mount, involved and seemingly embryonic in the protoplasm of the cells, be demonstrated. The cells, in a number of instances, were found to be apparently swollen, and to contain between the periphery and the nucleus a cloudy or granular mass, on the outer edge of which, but still within the protoplasm, were found the minute particles which gradually approach the appearance of bacilli as they near the periphery, until at the outer edge, and in some even breaking through the cell wall, they appeared as fully developed bacilli. In most of these cells the nuclei appear granular and in all, even those in which the cloudy swelling is not discernible, an unusual appearance is manifest.

Up to this time and for two days subsequent there had at no time in any of the thirty odd mounts, ap-

peared the least evidence of breaking down of tissue, no pus, and no yellow elastic fibres. Wherever bacilli appear about to emerge from the cell, it is noticeable that they are more fully developed and that they take the stain in a more characteristic manner. (I might say here that the staining process employed was a modification of that recommended by Ehrlich, requiring an immersion of about twenty-four hours. I do not think that any of the more rapid methods would have demonstrated this condition.)

On December 15th, began a series of severe and exhaustive attacks of hæmoptysis, recurring at intervals of from two to twelve hours, up to the 24th. These hemorrhages originated from the bronchial walls, in close proximity with that portion of the upper left lobe which had previously given the slight evidences of partial consolidation.

On January 1, 1894, the blood having pretty thoroughly cleared from the expectoration, another microscopical examination of the sputum was made. Bacilli were scattered here and there throughout the specimen, not in large colonies, but taking the stain in the usual manner, and perfectly pathognomonic. Some pus was also found. The evidences of breaking down of lung tissue were also distinguishable by the elastic fibres which now made their appearance in the matter expectorated.

On February 14th, less than a month before death, another examination of the sputum was made, in which were seen evidences of the rapid destruction of tissue and the vicious ravages of the tuberculous process. Pus appeared in large quantities, while bacilli were seen in thickly crowded colonies. Yellow elastic fibres were found in increasing amounts, and particles of sloughed tissue, even perceptible to the naked eye, could be distinguished, while physical examination revealed a rapidly growing cavity. Death occurred on March 10th, from asthenia. No autopsy was held.

Now, in conclusion, the point which I wish to make is this: It is not the presence of the fully developed bacillus to which is due the destructive process of tuberculosis.

I believe, not that the bacillus originates, *de novo*, in the tubercle, but that its development from the spore is the result of the disease process, to which the necessary requirements of the life and growth of that spore give rise; that furthermore, when the bacillus is mature and has deposited its elementary spores in the body, it has fulfilled its mission, is no longer an element of disease and is cast from the body as an effete product. How visionary may be my deductions I leave to your discussion to determine.

86 Jefferson Avenue.

The Etiology of Cancer.—The French Surgical Association recently held its eighth annual congress. The etiology of cancer was the most important question discussed. According to M. Bard, who opened the debate, the differentiation of malignant tumors in a pathogenic sense is an error, whatever may be their origin or their structure. All the tissues of the human organism may engender cancer, and there is no reason for applying this term to epithelial tumors. Each tissue may be the seat of a specific cancer, and this cancer owes its origin to a young cell endowed with an exaggerated power of reproduction. It is superabundant vitality which differentiates the cancer cell from the normal cell. M. Bard rejects the microbic theory as to cancer. Considerable diversity of opinion on this point was expressed by other speakers. It is decided that in future the French Surgical Congress will always meet at Paris in October, at the same time as the General Assembly. Many of the *congressistes* who visited the Lyons Hôtel-Dieu were disappointed to find the old white bed curtains (which have been discarded elsewhere), the old hospital smell of bygone days, and the food being prepared in the wards. M. Poncet's wards are being remodelled.

THE RECENT TYPHOID EPIDEMIC AT WINDSOR, VT.

By J. D. BREWSTER, M.D.,

windsor, vt.

In compliance with the request of our secretary and others, I will endeavor to give a brief account of the epidemic of typhoid fever which prevailed in Windsor, beginning in March, 1894. The first case reported was on March 15th. This case was in a family residing at the extreme southern limit of the village, and at the time no apparent cause could be found. No other case developed until March 24th and 25th, at which time a large number of people were attacked, almost simultaneously, with a febrile condition which soon showed itself to be unmistakably typhoid fever. These cases were among all classes of people, rich and poor alike, but all within the village limit.

Observation soon showed the disease was confined entirely to families using the village water supply, those having wells being entirely exempt, except in cases of children who drank the village water at school. This fact led immediately to the examination of the water system. Windsor was supplied by a series of springs situated about two miles or more from the centre of the town; these springs formed a small brook, which ran along a valley for about a mile, passing six farms and dwelling-houses, and then emptying into a reservoir, whence iron pipes conveyed the water into the houses of Windsor.

Now, about forty rods above the source of this brook a farm-house is situated, where it was ascertained a person had, the previous January, suffered from a feverish condition about four weeks. It was supposed to be a non-infectious form of fever, and was not reported to the local board of health, and consequently no care was taken of the discharges of the patient, and they were thrown into the vault; and to make matters worse, the sink drain was frozen at the time, so all wash-water was thrown out upon the snow. During the very warm weather which we had the first week in March, the snow melted, and all this accumulation easily found its way into the brook, and thence into the reservoir and our homes.

This explanation was unanimously indorsed by the State Board, who made an official visit to the place soon after the outbreak. The local Board at once issued orders to have all water used for cooking and drinking purposes, boiled. At the same time the town provided a water-cart to deliver water from an adjoining spring.

From March 24th to 30th, about eighty cases were reported; from this date to April 27th, the cases became less frequent, this time being probably the limit of the primary cases; the later ones were secondary, and mostly occurred in families already suffering from the disease. Up to July 28th there were 130 cases, these occurring in sixty eight families. The largest number afflicted in one family being 5, the majority only 1. The ages ranged from ten months to ninety-two years, but the majority were under twenty years of age, and a large per cent. were children; the latter withstood the disease to a remarkable degree, even with a protracted evening temperature of 104° F. The population of Windsor is 1,300, so about ten per cent. of the inhabitants were affected by the disease. We were fortunate in having only seventeen deaths, or thirteen per cent. Six of the fatal cases had intestinal hemorrhage.

S. H ——, aged forty four, died from complication of erysipelas. One died from perforation. Mr. V. —— had temperature of 106° F., at death, and there was a rise of a degree a short time after.

M. K——, a girl fourteen years of age, was afflicted with infantile paralysis. She died in the tenth week, and at death had seven bed sores, those on each hip leaving bone exposed, which was also carious. Three

died before the end of the second week, the average fatality was at about the end of the third or beginning of the fifth week.

I will now give a brief history of a few of the cases which have recovered. Perhaps the most remarkable one was Mrs. C——, about thirty years of age. She showed all the symptoms of typhoid—coated tongue, enlarged spleen, rose spots on abdomen, etc.; but developed no fever until the fifty-first day, when the evening temperature was 99° F. It ranged from this to 99$\frac{5}{10}$° F., until the sixty-third day. Convalescence being very protracted after the thirteenth week.

A. A——, aged seventy, had typhoid symptoms, with evening temperature of 103° to 105° F., with croupous pneumonia, rusty sputa, which continued to the twelfth day; from the 14th to the 21st, no fever. From twenty-second to thirty-second day average temperature, 102° F.; symptoms wholly abdominal; rose spots present. Temperature normal to the fortieth day, from the fortieth to fifty fourth there was fever, the highest point reaching 101° F. Symptoms: Catarrhal pneumonia. Convalescence protracted.

C. A—— had relapse on the twenty-first day with remarkable eruptions, some thirty or forty large papules which soon became vesicula and many of them pustular, while one was a true adenitis which went on to suppuration, the abscess containing one-half drachm of pus. This certainly was due to sepsis. This same case at the beginning of convalescence had suppurative otitis media and inflammation of the mastoid, with one recurrence.

G. B—— had evening temperature of 105° F. first week, delirium beginning on the fourth day. On the twenty-first day had subsultus and picking of clothing, and insomnia, continuing for a week. Temperature ranging from 103° to 104° F. at night. Convalescence set in after the seventh week, but delirium continued two weeks longer.

Two cases had phlebitis of the leg. Ten cases had intestinal hemorrhage.

Mrs. B—— was confined on the fourth day. Temperature, 104° F. The fever ran the usual course, and recovery took place after the fifth week.

Arthur K——, aged thirteen, after a mild form of the fever, appeared convalescent, when malaria made its appearance. Temperature, 105° F. After the second day the same symptoms recurred with the usual course of malaria. A large dose of quinine prevented a return. His history showed he had had malaria eight years before.

The most prolonged case was that of Henry S——, who had a temperature for one hundred and two days. This case had severe hemorrhages on the forty-ninth day. He was not moved from his bed for one hundred and sixteen days. After convalescence he gained twenty-three pounds in twelve days.

I could give many more interesting cases, if time would allow.

From July 28th to August 30th only two cases were reported, but during the month of September there have been twenty cases, thus making a hundred and fifty cases in all since the beginning of the epidemic. All of these later cases, with two or three exceptions, have been among the poorer classes, living in tenement-houses. Two of these died of perforation; in both cases the patients having been in a state of collapse for forty eight hours before death. Temperature, 93° to 97° F., and pulse, 125; abdomen extremely distended. The accidents in each case being sudden, when everything seemed progressing to a speedy convalescence.

One fact is worthy of mention: in several cases there seemed to be secondary infection coming from four to six days after apparent convalescence, when there had been no change in diet or management of the patients; they usually had fever for seven days, when true convalescence occurred.

Throughout the whole time the sickness prevailed, all possible precaution was taken to disinfect discharges and the clothing of persons afflicted. The discharges were buried after disinfection with either corrosive sublimate or copper, and the clothing was put in boiling water. We all know how difficult it is to impress the importance of this upon everyone, and doubtless, among some of the more ignorant classes the instructions given were disregarded, thus causing the later outbreak of the disease among that class.

Windsor has for twelve years been remarkably free from the disease, not averaging more than five to seven cases a year. I will here state, that the prison was entirely exempt from the disease, the water-supply being from a different source.

The village voted to discontinue the old supply, except for motor purposes, and now have their water from springs which flow from the hillside directly into a covered reservoir, from which the water is pumped into a stand pipe, also covered. The springs are far distant from any dwellings, and furnish no possible opportunity for pollution. No water supply that is exposed to drainage from dwelling-houses can be safe, for only the most untiring vigilance can prevent some accidents which will involve its consumers in as sad an experience as Windsor, after using the water system for over fifty years.

I cannot close this paper without paying some tribute to the noble way in which our citizens responded to the needs arising from such a calamity; a mass meeting was held in one of the churches, and a committee appointed to solicit money and clothing, such as was needed for the sick, and to provide food for the needy ones. Many volunteered as watchers, and every day the village was canvassed to ascertain the needs of all; the sum of $700 was raised to provide nurses for those who could not provide themselves. Twenty-eight nurses were employed, coming from Burlington, New York, Hartford, Ct., Worcester and Boston, Mass., thus aiding the physicians in no small degree. No disease needs more careful watching than typhoid fever, and many owe their lives to the never-tiring care of the faithful nurse. Windsor may well be proud of the generosity of her people, as this test has proved them. May the time be far distant when any other town shall be called upon to prove herself her equal.

Removal of the Restiform Body.—Dr. Biedl showed (Royal Medical Society, Vienna) a cat in which the restiform body had been completely removed a fortnight previously. The first symptoms after the excision were rotation in the opposite direction, rotation of the eyeballs, and forced decubitus. After a few days, when the cat essayed to walk, it found great difficulty in doing so, not, however, on account of paralysis, but because of loss of cognizance of place and surroundings. The head was held toward the left and near the ground, and the itinerary was toward the left in a circle. Disturbance in coordination of the muscles of the right side of the neck and throat caused it to eat on the right side. The experimenter thought the conditions presented by the animal could be explained on the supposition of functional suppression of a track along which nerve-stimulation proceeds from the cerebellum.

Von Bülow's Brain.—Hans von Bülow, the eminent pianist and conductor, who died at Cairo, in February last, had for years been a martyr to maddening headaches. In accordance with his often-expressed wish, after his death Professor Kaufmann, of Cairo, who performed the post-mortem examination, extracted the brain, and sent it to a German physician for examination. It now appears that the surface origin of two nerves leading to the scalp was imbedded in a scar, left by an attack of meningitis in early youth. Whether this scar can be held responsible for the great artist's many eccentricities must remain an open question.

A PLAN OF INFANTILE MEASUREMENTS.[1]

By HENRY DWIGHT CHAPIN, M.D.,

PROFESSOR OF DISEASES OF CHILDREN AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

THE extremely rapid growth of the infant after birth makes a careful observation of all the phenomena connected therewith not only interesting but important to the physiologist and practical physician. As a partial index of this growth an accurate system of measurements is desirable, not only as noting a proper rate of evolution, but also for comparative purposes, after a sufficiently large number shall be made. In proposing a plan of measurements two extremes are to be avoided; first, in having too few for valuable data, and, second, in advancing a system too cumbersome or complicated for general adoption. It is with an effort to avoid these evils that the present plan is submitted. All that is required is a tape measure, a strip of sheet-lead, a pencil, a pair of calipers, and a table.

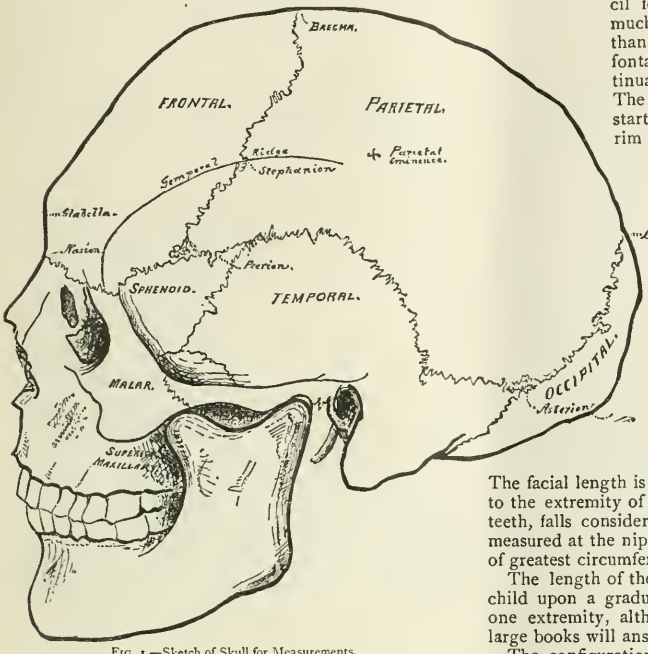

FIG. 1.—Sketch of Skull for Measurements.

Name.	Age.	Sex.	Nationality. (Parents.)
Date.			
Great circumference.			
Naso-occipital arc.			
Naso-bregmatic arc.			
Bregmato-lambdoid arc.			
Lambdo-occipital arc.			Configuration.
Binauricular arc (through bregma).			
Binauricular arc (through lambda).			
Diameters of anterior fontanelle { anterio-posterior, lateral.			
Cephalic index.			
Facial length.			
Circumference of chest.			
Circumference of abdomen.			
Length of body.			
Weight of body.			
Diet.			
Notes.			

The rapid evolution of the brain during infancy, and the fact that the future efficiency and well-being of the individual depend so largely upon its normal and healthy growth, renders a study of the head of great interest, and accordingly ten of the measurements are made upon the skull. As the skull is fairly representative of the brain during the years of its development, the measurements taken during infancy are more instructive as to brain size and development than those taken in later years. The skull changes considerably in its proportions during the first three years of life, and then more slowly up to the end of the seventh year when it has very nearly attained its full size.

The circumference is taken by passing the tape horizontally around the head, passing over the glabella and a point just above the external occipital protuberance. When this is procured, the following data will give a very rough approximation of the volume—x: circumference:: 1350: 50. Thus, if the circumference is 42 ctm., the approximate volume will be 1.134 cu. ctm. The naso-occipital arc is measured from the glabella to the external occipital protuberance. Before removing the tape, the three arcs composing the naso-occipital can be read off, namely, the naso-bregmatic, the bregmato-lambdoid, and the lambdo-occipital arcs. In order to do this accurately, the bregma and lambda should be previously marked, and I have employed an aniline pencil for this purpose. These points are much more easily indicated in an infant than in the adult. Where the anterior fontanelle is widely open, a line in continuation of the frontal sutures is marked. The binauricular arcs are measured by starting, in both cases, from the anterior rim of the meatus, and passing the tape respectively over the bregma and the lambda. When the anterior fontanelle is open, the antero-posterior and lateral diameters are taken. The cephalic, or length-breadth index, is measured by calipers, which are applied at the greatest biparietal and antero posterior diameters. The formula for obtaining this index is as follows—Length: Breadth:: 100: x. All cephalic indices falling below 78 are classed as dolicocephalic; from 78 to 80, mesocephalic; and above 80, brachycephalic. The facial length is measured from the root of the nose to the extremity of the chin, and, in the absence of the teeth, falls considerably below the adult. The chest is measured at the nipple line, and the abdomen at its point of greatest circumference.

The length of the body is measured by extending the child upon a graduated board with a movable slide at one extremity, although a flat table with a couple of large books will answer.

The configuration of the skull is taken by carefully applying a strip of sheet-lead horizontally around it, just above the ear, the free ends always being on the right side, for the purpose of uniformity.

The tracing is put upon the chart by running the point of a sharp pencil just inside the lead. It is well to mark the centre of the lead in front, so as to be able approximately to draw a median line through the configuration and thus detect asymmetry. It is not contended that this is an absolutely accurate method of obtaining a configuration of the skull, as the metal is so yielding that there is a possibility of its springing somewhat in transferring it from the skull to the chart.

With care, however, it is fairly accurate, and will exhibit any form of asymmetry that is at all marked. I have tried harder substances, such as block tin, but found it more difficult and somewhat painful to apply, without being appreciably more accurate.

A lateral configuration is taken by applying the lead over the parietal region, from one meatus to the other.

Ninety-eight cases, from birth up to two years, have

[1] Read by invitation before the Section on Diseases of Children of the British Medical Association, at Bristol, August 2, 1894.

been carefully measured and are incorporated in the accompanying table.

	Under 1 week. From birth. 9 cases, all on breast.	From 1 week to 1 mo. 20 cases, 18 on breast.	From 1 to 3 mos. 18 cases, 7 on breast.	3 and 4 mos. 9 cases, 3 on breast.	5 and 6 mos. 4 cases, 1 on breast.	7 and 8 mos. 5 cases, 1 on breast.	9 and 10 mos. 8 cases, 2 on breast.	11 and 12 mos. 6 cases.	From 12 to 18 months (inclusive). 8 cases, 2 on breast.	From 18 mos. to 2 years. 6 cases.
	Ctm.	Ctm.	Ctm.	Ctm.	Ctm	Ctm.	Ctm.	Ctm.	Ctm.	Ctm.
Great circumference....	34.72	35.09	37.25	38.55	38.94	41.3	42.68	44.91	46.81	47.41
Approximate volume, cu.c.	917.44	969.03	1005.75	1040.85	1051.38	1115.1	1152.36	1212.57	1263.87	1280.07
Naso-occipital arc	22.33	23.05	24.86	25.83	26.05	27.9	28.81	30.41	31.00	32.83
Naso-bregmatic arc.....	9.22	9.80	9.55	10.05	9.83	11.6	11.12	12.41	12.68	13.16
Bregmato-lambdoid arc..	8.94	8.90	9.83	10.11	10.16	9.0	11.06	11.33	10.68	11.41
Lambdo-occipital arc...	4.16	4.80	5.48	5.66	6.05	7.3	6.62	6.66	7.62	8.25
Binauricular arc (through bregma)	22.00	22.95	23.55	24.38	23.83	26.6	26.68	28.33	28.31	29.33
Binauricular arc (through lambda)	21.61	23.05	23.75	25.05	25.22	26.9	26.68	27.66	29.25	29.91
Diameters { Ant.-post ...	4.00	4.45	4.05	3.88	3.77	3.6	3.00	3.00	1.87	Closed.
ant.-font. } Lateral	3.00	3.70	3.16	3.33	3.38	3.2	2.75	2.41	1.68	Closed.
Cephalic index	$\frac{9.11}{11.44} = 79.63$	$\frac{9.25}{12.30} = 75.20$	$\frac{9.94}{12.72} = 78.14$	$\frac{10.11}{13.22} = 76.47$	$\frac{10.44}{13.44} = 77.67$	$\frac{11.2}{13.8} = 81.15$	$\frac{11.37}{14.62} = 77.77$	$\frac{12.5}{15.0} = \frac{83.33}{}$	$\frac{12.00}{15.62} = 76.82$	$\frac{12.16}{16.33} = 74.46$
Facial length	4.94	5.39	5.75	5.72	5.94	6.3	6.05	6.75	6.68	7.05
Circumference, chest	32.05	32.87	34.11	35.38	33.88	37.3	39.56	41.16	41.81	47.25
Circumference, abdomen.	29.88	30.90	32.00	31.66	31.77	32.6	38.18	38.91	39.75	46.33
Length of body	49.72	52.12	54.90	58.38	59.83	64.2	66.06	69 25	73.25	78.16
Weight of body	8 lbs. 6 ozs.	7 lbs. 5 ozs.	8 lbs. 6 ozs.	10 lbs. 12 ozs.	10 lbs.	12 lbs. 1 oz.	14 lbs. 13 ozs.	13 lbs.	... .	20 lbs. 4 ozs.

While broad and positive generalizations cannot be made from so few cases, a study of the table is not without some interesting suggestions. It must be remembered that they were all hospital cases, taken either from the Infant Asylum or the babies' wards, and many were thus much below par. This will explain the low average weight, being actually less in the cases from one week to one month old, than in those under one week. Infants collected together in numbers, especially in a hospital, nearly always lose weight, if kept very long. This tendency to scant weight does not seem to have had much influence upon bony diameters, in comparing the skull measurements of the table with adult measurements already published. The shrinkage falls principally upon the adipose tissue. While the degrees of health, and the irregular number of cases give some varying results in the ten classes into which the cases are divided, yet it is believed, on the whole, they represent a certain type of infant development. With increase in the age of the infants there is noted a gradual and steady enlargement of the great circumference of the skull, and, from this, of its estimated volume. The naso-occipital arc likewise increases at about the same general rate as the great circumference. In comparing the naso-occipital arc with the great circumference, there is an increasing difference as the children grew older. Thus, the difference under one week is 12.39 ctm., while at two years it is 14.58 ctm. The naso-bregmatic and bregmato lambdoid arcs are very similar in the series, but after seven months the former arc becomes slightly larger from the development of the frontal part of the brain. Although no intellectual growth can be said to take place under two years, there is an active evolution of the front of the brain, with increase of the perceptions. The binauricular arcs through the bregma and lambda are quite similar, the average of the eight cases between nine and ten months being identical. The size of the anterior fontanelle, as shown by the antero-posterior and lateral diameters, varies according to the development of the infant. Where the fontanelle remains widely open with the increased age of the infant, there will always be marked symptoms of rickets elsewhere. Thus, in Case 49, a boy, aged ten months, with both diameters 5 ctm., the configuration shows a markedly rickety head, and the notes give other symptoms of the disease. By eighteen months the fontanelles were all closed.

The cephalic indices showed the cases to be divided as follows: Under one week, mesocephalic; from one week to one month, dolicocephalic; from one to three months, mesocephalic; at three and four months, dolicocephalic; five and six months, dolicocephalic; seven and eight months, brachycephalic; nine and ten months, dolicocephalic; eleven and twelve months, brachycephalic; from twelve to eighteen months, dolicocephalic; and from eighteen months to two years, dolicocephalic. None of the averages being below 70 or above 90 could be considered abnormal. In a few individual cases, however, the head was abnormal. Thus, a Polish infant of eight months gave a cephalic index of $\frac{12}{13} = 92.30$. The facial length increased slowly, as would be expected from the absence of teeth, except in the older infants.

A study of the configuration shows slight asymmetry in all the cases, but only in a few instances is it well marked. It is interesting to note that the posterior transverse diameters of the configurations are nearly always greater than the anterior diameters. This would be expected, as the sensori-motor parts of the brain are more developed in infancy than the other areas. I regret that horizontal configurations were not taken higher up, through the parietal bosses, as I believe the contrast would have been greater. Through the courtesy of Dr. Peterson I have made configurations upon two fetal skulls in his possession, one between three and four months, and the other at seven months. The first shows an oval, undeveloped brain, and the second exhibits the forcing out of the parietal bosses by the rapid evolution of the sensori-motor area of the brain, while the front of the skull appears stationary, from the size of the configuration.

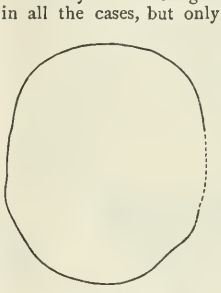

FIG. 2.—Fetal Skull, between Three and Four Months.

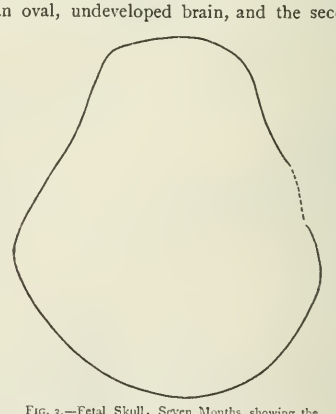

FIG. 3.—Fetal Skull, Seven Months, showing the forcing out of the Parietal Bosses by the Development of the Sensori-motor Area of Brain.

The circumference of the chest is several centimetres larger, on an average, than that of the abdomen. There would probably be a greater difference were it not that so many of the cases presented evidences of rickets. Indeed, I have come to look upon a disproportion of the measurements of the chest and abdomen as a handy way of recognizing rickets. In some cases the circumference of the abdomen was greater than that of the chest, and then the other evidences of rickets were equally well-marked. Thus, in one case, the chest was 23 ctm. and abdomen 29 ctm.; in another, chest 38 ctm. and abdomen 38.5 ctm., with bony changes severe. An acute digestive fermentation will not produce the enlargement of the abdomen that is seen in the chronic flatulent distention of rickets. Hence the ratio between the circumference of the abdomen and chest is not only a sign, but, to a certain extent, a measure of the degree of rickets. The length of the body increased steadily in all the cases measured. The breast-fed babies invariably presented larger measurements than those artificially fed.

The sketch of the skull seen upon the chart was designed by Dr. C. L. Dana, and I am indebted to him for its use.

AN ACCOUNT OF THE LATE EPIDEMIC OF TYPHOID FEVER IN MONTCLAIR, N. J.

By THOMAS HORTON, Sanitary Engineer,

MONTCLAIR, N. J.

During August of this year there appeared in Montclair a small epidemic of typhoid fever numbering in all nineteen cases, resulting in one death. Its close succession to the more severe epidemic in the early spring caused a natural anxiety in the town, and placed the Board of Health in a responsible position. As agent and inspector of such board much of the work was left to me, and an outline of the epidemic and the efforts of the Board of Health in dealing with it is briefly as follows:

About July 20th there appeared simultaneously in the town two cases of typhoid fever, one in a hotel and the other in a French bakery and ice-cream saloon situated about half a mile from the hotel. Little attention was given these cases beyond the ordinary precautions of the attending physician until about August 1st, when the appearance of two new cases, one in each of the above buildings, caused a slight suspicion of an outbreak. All the cases were removed to the hospital, and on the development of five more cases by August 4th, a systematic investigation was begun to discover the course of the epidemic.

I visited the house of every case, made an inspection of the premises, left instructions to be observed in the care of the patients, and filled out a blank form to aid in discovering any common source of infection which might exist. In each instance the water, milk, and ice-cream supply was investigated, and the date of sickness and the occupation and place of business of the patient obtained. Of the nine cases thus far developed, nothing was found in common but the public water-supply and the use of a few of the old wells which are so numerous in the town, and which, in many instances, I knew to be badly polluted. At this time I hardly suspected the wells because three or four would have been involved, and I thought it very improbable for so many wells to be infected at once, and, besides, two patients claimed not to have used well-water at all. We made, however, an investigation of the public water supply, which is a mixture derived from driven wells and the Newark aqueduct. There was practically no typhoid in Newark and other places supplied by the aqueduct, at the time, so that only the well water was examined. Samples taken from the driven wells and suspicious, large crevices in the pump-wells, showed the water to be of high organic purity and that the typhoid had presumedly no connection with it.

Being confident of the purity of the milk and public water-supplies, I again turned my attention to the wells and the possibility of secondary infection. On closer investigation I discovered that, in the case of the hotel, the first patient was a transient guest who had arrived only two weeks before developing the disease. Two weeks is barely within the "incubation period" for typhoid fever, and the assumption is more strongly in favor of this being an imported case than that infection took place almost immediately on arriving in Montclair. Continuing on this assumption, I discovered further that great carelessness had been practised, in the care of the patients before the attending physician had been called, and that the four cases which developed later in the hotel were either in the direct family of the first patient, or among those who had acted at times as nurses. This information, added to the fact that the cases developed in successive intervals during three weeks, seemed to justify my opinion that these cases spread through secondary infection, being transferred from one to the other through some of the many conceivable ways where careless habits and ignorance prevail. In fact these cases may be considered a small epidemic in itself, being situated away from, and having no connection with, the other typhoid cases in the town.

The other portion of the epidemic, numbering fourteen cases, was confined almost wholly to the locality of the bakery, and I am inclined to believe originated in much the same manner, being infected in some way from an old case in the building a month previous. On inspection the bakery was found to be a filthy place, kept by filthy people. The cellar, from leakage and want of proper drainage, was little more than a mire, and was dark and mouldy. Old cloth sacks, bottles, and ice-cream cans were piled promiscuously on the floor, and the ice was delivered through small windows on to a wooden grating, or into the mud, as chance happened. On learning that the ice cream was made in this cellar, and further, that those who made the ice cream and worked in the bakery had helped in the care of the first patient, I saw the dangers which might possibly follow. Moreover, by this time another case had already developed in the house, and if, as it appeared, the case was secondarily infected from the one a week previous, there was a great possibility that the ice-cream might be infected also and the disease spread very rapidly.

I had the bakery immediately closed, and to leave no stone unturned I began an analysis of the suspicious wells in this vicinity. The worst two wells I had closed —one of which was used by the bakery, and, as was soon seen, by most of those who developed typhoid later. That this well was infected at the time of the outbreak I very much doubt, or else the remaining cases would have developed earlier. That it could have been infected by the people in the bakery is very possible, for the germs may have been washed from infected hands or utensils on to the floor of the well, or into a wooden catch-basin connecting with the pump, and from thence sipe through into the well.

At all events ten cases developed within the two weeks following the closing of this well and the bakery, and, of these, eight had used the ice-cream and milk from the bakery, and seven had used this one well. Whether both these influences acted together, or whether the use of the well was merely incidental from its public location, can hardly be settled. But since all these cases developed within the following two weeks and a half, or within the "incubation period," there seems the strongest evidence that they originated from one or both of the above sources, and that by cutting off these sources of infection we prevented a further spread of the epidemic.

After this epidemic no case of typhoid fever appeared in Montclair for over two months and a half.

Cremation in England makes slow progress. A crematory recently erected in Liverpool is only the third in the country, the other two being at Woking and Manchester.

BERIBERI ON THE BARK ROBERT S. PATTERSON AT PERTH AMBOY, N. J.

By ALBERT S. ASHMEAD, M.D.,

NEW YORK.

THE bark Robert S. Patterson, of a gross tonnage of seven hundred and fifty-eight tons, Captain Henry L. Burton, thirteen days from Navassa, West Indies, arrived at Perth Amboy on November 10th, with a European crew, all in good health, and seventy surviving negro passengers, the whole number of these colored people having been at the outset seventy-five; the wanting five had died of some distemper during the passage.

In company with Health Officer Dr. Ramsey and Mr. Tsuchiya, of Japan, I visited the ship and found that ten of the seventy survivors lay sick in the hold. One lay dead, having died after reaching port; across his chest lay another dying; two others whom I examined were also dying; seven others were in various stages of the same distemper. I examined them all, and found that the distemper was beriberi. One of the ten sick men had acute pernicious, four of them moist, and five, dry beriberi. These seventy five men, who had worked in the phosphate quarries at Navassa, had been shipped by the company, in a space less than five feet high, thirty feet wide, and fifty feet long. This space had no port-holes. Two hatchways, each four feet square, were the only ventilation. The hatchways had no sail, nor pipe appliances for ventilation. A considerable part of the space was taken up by straw mattresses, baggage, ship stores, and a large quantity of red phosphatic earth, the cargo of the ship.

It appears that in a space of less than seven thousand five hundred cubic feet seventy-five men, at any rate seventy men, lived for thirteen days and thirteen nights, with the least possible ventilation, with four lanterns consuming part of the oxygen necessary for life, with all the foulness engendered by breathing, defecation, and urination; these seventy-five men being poorly clad, and coming from many hardships suffered in a tropical clime, who were so apathetic that nothing could have induced them to go on deck for fresh air, or for any care of health or cleanliness.

The crew was composed of eleven Europeans, none of whom was, or had been sick; they occupied a part of the ship which was thoroughly ventilated.

I am informed by a leading manufacturing company of this city that phosphatic earth, at which these negro passengers had been employed, and which composed the ship's cargo, is made up of sixty per cent. of bone phosphate of lime, silica, alumina, and iron, and is a natural fertilizer.

Here is another instance to strengthen the theory which I have so often maintained and illustrated by a great variety of facts: charcoal fumes in Japan, carbonized unripe coffee cargoes from Java (the immature coffee is more liable to fermentation), fermenting sugar and grain cargoes, overcrowding in hospitals (Richmond Insane Asylum, Dublin), disintegrating graphite (pure carbon) cargoes from Ceylon, etc.

It was evidently in this case, too, carbonic poison that was the cause of the outbreak. It could not have been the diet. Even if this had been much worse than it seems to have been they could have borne it for thirteen days. The disease broke out five days after leaving port, that is at a time when carbonic poison could have produced its effect while the diet could not.

I do not even admit the joint operation of carbonic poisoning and insufficient diet to produce the outbreak on the Robert S. Patterson. In corroboration of this opinion of mine, I quote Dr. J. A. Wetherill,[1] speaking of the outbreak at the Richmond Asylum, Dublin.

"Whilst medical officer at Wyndham, East Kimberley, Western Australia, I had under my care sixty aboriginal native prisoners. These were chained up at night in a galvanized iron one roomed building 30 by 14 by 12 feet. The only ventilation was by means of four small barred open windows. The floor was of jarrah-wood. Two iron buckets were allotted to every three or four men—one into which the excreta were passed, the other containing drinking-water. The jail was built on piles on the edge of a marsh not twenty yards from the water of Cambridge Gulf. The external night temperature was never below 75° F., and frequently up to 90° F. During the day they had as food, per man, one pound of bread, three-fourths pound of meat, generally salted, one-half pound of rice, with three pints of sweetened tea without milk. Occasionally broth was served and the rice was supposed to act as a substitute for fruit and vegetables, which were not procurable. It must be remembered that the natives had been accustomed to roam unclothed, wild in the bush, free and unrestrained, living on kangaroo, iguana, honey, fish, roots, barks, etc, sleeping on the ground with nothing but the canopy of heaven as a roof.

"Under these conditions a number of them—I regret I did not retain the details—developed beriberi; the principal feature of which was the extensive œdema, and liability to sudden death apparently from syncope.

"The white inhabitants of the town, none of whom were affected, called the disease scurvy, but scorbutus it was not, for there were none of the classical symptoms of that disease, such as hemorrhage into joints, from the gums, etc., nor would it prove amenable to the administration of citrate of potash, vinegar, onions, etc. Beriberi could not have been introduced among the niggers from without, for there was no one either entering or leaving the place, a steamer calling but once every two months. It must, therefore, have had a *de novo* origin, and is, so far as I know, the first time beriberi has ever been seen in the aboriginal natives of Australia.

"From what I have read of the epidemic in the Richmond Lunatic Asylum, Dublin, and judging from my experience abroad, I should undoubtedly say the disease in the asylum is beriberi."

In the case of the Robert S. Patterson the poisoning was not the result of the fermentation of the cargo, as I have no doubt it was in several former instances studied by me. The overcrowding caused the presence of an excess of carbonic gases, the cargo had nothing to do with it. This is the conclusion which I draw from what President John H. Fowler of the Navassa Phosphate Company of Baltimore writes me: "There have never been landed at Baltimore (whither most of the phosphate is shipped), coming from Navassa Island, any cases of sickness similar to those on the Robert S. Patterson. In regard to the substance contained in the cargoes from Navassa, we sell our phosphates on the basis of the contents of bone phosphate of lime, and therefore do not have full analyses made of the different lots as received. We, however, find upon referring back to our books that in 1891 one of the cargoes sent abroad contained 3.98 per cent. of carbonic acid out of one hundred component parts."

I have had a sample of this phosphate analyzed; there were found only three to four per cent. of carbonates.

Dr. Daland asks me "What was the condition of the pork eaten by the beriberi cases that landed at Perth Amboy? Was there any evidence of decomposition?"

It is Dr. Daland's opinion that pork, in a decaying condition, is a cause of beriberi, he having examined a ship in Philadelphia, the Lanark, on which a beriberi outbreak had taken place, attributed the disease, not to the carbonic cargo, 5,000 tons of sugar, but to the pork. Strange to say, all these cases were Mohammedans, who, as everyone knows, abstain from pork. In answer to Dr. Daland, I have to state that if the pork on the Robert S. Patterson was bad, it was eaten as well by the European crew, who escaped the disease, as by the negroes who caught it. I have said in the above article that this European crew slept in a well-ventilated room. Why, should I ask Dr. Daland, again, have they so much beriberi or kakke in Japan, where no pork is eaten at all?

[1] British Medical Journal, October 27, 1894.

That diet has very little, if anything to do with this matter, is sufficiently shown by Wetherill's cases, which I have already quoted. His prisoners were very well fed, and yet contracted the disease from being confined in insufficient space.

As to the surprise which has been expressed at finding that beans were the principal article of diet of these Navassa negroes, when Dr. Simmons (as well as every other doctor in Japan) avers that the Japanese bean (adzuki, phaseolus radiatus), is the very nutriment to give to beriberi patients, I call attention to the fact, that the Japanese bean is used in this case simply as a diuretic, it having extremely powerful diuretic virtues.

Progress of Medical Science.

The Signs of Heart Failure in Fevers. — M. Huchard has made an important statement to the Société Médicale des Hôpitaux regarding the signs of heart failure, which, he thinks, should not be limited exclusively to the determination of the weakening or the disappearance of the first sound. There are, beside this weakening, two other symptoms which he has observed; these he has named the embryocardiac and the bradydiastoliac, or prolongation of the cardiac diastole (*The Sanitarian*). This last symptom was studied some time previously by M. Huchard as a new prognostic symptom in diseases of the heart. He insists upon these facts, and advances proofs to support their correctness, and to show that there are often great errors committed in the diagnosis of acute myocarditis in fevers, and especially in typhoid fever. In this disease the autopsies he has made have proved to him satisfactorily that often, in very grave symptoms of heart trouble, there were hardly any appreciable lesions of the muscular constituents of the heart, and reciprocally. On the other hand, there may often appear in cardiac sclerosis considerable myocardiac lesions, and that even while life may last for a great length of time. In emphasizing these conditions, the results of his personal observations and of the previous observations of Bernheim, of Nancy, in 1882, he has shown that many of the symptoms attributed to myocarditis of typhoid fever must be referred to the effect of functional disturbance, or to lesions of the cardiac nervous system. In all these cases it is certain that the symptoms of myocarditis of infectious conditions, admitted by the greater number of authors, do not exactly reproduce those which he has studied since 1870, with Desnos, in cases of variola. This latter disease may produce myocarditis; typhoid fever causes myocarditis with cardiac nervous troubles, which exert a preponderating influence, and the grippe, which resembles typhoid in this respect, as determining myocarditis, but causes other disturbances of cardiac innervation which he studied four years ago,[1] long before Sampson, of London, who has made a report on the subject to the Medical Society of that city. These researches and these considerations have a great practical importance; they show clearly that the poison of typhoid acts on the heart like digitalis; this agent should not be employed indiscriminately in the treatment of a case of typhoid fever complicated with cardiac symptoms. Injections of caffeine, of ergotine, and even cold baths, should be employed in preference.

M. Hayem described, in 1886, symptomatic myolitis, after having examined the hearts of a great number of patients who had died from varioloid and from typhoid fever. He attributed the alterations of the muscles to changes in the blood and in the blood-vessels. Myocarditis is much more marked in typhoid fever than in variola, which is contrary to the statement of M. Huchard. Sometimes even a vitreous degeneration of the muscular fibres is found in typhoid, a condition which does not exist in variola. It is difficult to attribute death to alterations of the muscular fibres, for it seems due rather to a toxhæmic condition, the effects of which are directed as much to the vessels as to the muscles and the nerves of the heart and other organs. M. Siredey has also found that myocarditis was more frequent in typhoid fever than in variola. In typhoid, the changes in the heart are often limited to the arteries. M. Huchard has, on the contrary, always observed that the fibres in myocarditis were much more deeply changed in variola than in typhoid. The following consideration goes to prove that in typhoid the nervous element should be added to the myelitic. In proportion as sudden deaths are relatively frequent in the cardiac complications of typhoid fever, they are rare in variola. If the cause of death is of equal force in the two affections, why are the results so different?

[1] Soc. Méd. des Hôpit., 1890, et Bul. Med., 1892.

Milk Diet and Micro-Organisms in the Alimentary Tract.—In the *Dietetic Gazette* are given the results of some recently published work by MM. Gilbert and Dominici (Action du régime lacté sur le microbisme du tube digestif, Comptes Rendus de la Société de Biologie) on the number of bacteria in the alimentary tract after the ingestion of milk. A milk diet exercises a remarkable influence on the number of bacteria present in the fæces of man and of animals. A healthy adult man submitted for five days to a diet consisting in part of 2.5 litres of milk daily. The fæces after ordinary food contained 67,000 bacteria per milligramme. At the end of two days under this new diet they contained only 14,000 bacteria; at the end of three days, 5,000; after four days, 4,000; after five days, 2,250. The weight of the fæcal matter, which ordinarily amounted to 175 gm. per day in this individual, was reduced to 73 gm.; accordingly the number of bacteria daily excreted by way of the rectum was reduced from 11,725,000,000 to 164,250,000, *i.e.*, the milk diet thus had the effect of reducing the bacteria of the fæces to one seventy-first of the normal number.

The above results were obtained after the use of non-sterilized milk. In the case of a patient suffering from ulcer of the stomach, who had been nourished on an exclusive milk diet for twenty days and had received nothing but sterilized milk for ten days, 3,000 bacteria per milligramme were found in the fæces. This number is in close agreement with the lowest figure previously recorded. Similar modifications were produced in the fæces of the dog by a diet of sterilized milk, the number of bacteria decreasing from 25,000 or 21,000 to 1,000 or 500. In rabbits, non-sterilized milk caused an increase in the relative number of bacteria and a decrease in the absolute number. Two animals whose fæces normally contained thirty-five and forty-eight bacteria per milligramme were fed for twenty days on non-sterilized milk—one litre daily—containing 125 to 150 bacteria per milligramme. From thirty five, the number of bacteria increased to fifty seven, and from forty-eight to eighty-nine. Before the feeding of milk, the daily quantity of fæces was, in the case of the first animal, 175 gm.; in the second, 111 gm.; the total number of bacteria, 6,125,000 and 5,328,000 respectively. Since the milk diet reduced the daily amount of fæces to 5 gm., it is evident that the total number of bacteria was diminished to 285,000 and 445,000. Sterilized milk, however, decreased both the relative and the absolute number of bacteria. After being submitted to a diet of non sterilized milk for twenty days, the two rabbits above referred to were nourished upon sterilized milk. From fifty-seven and eighty-nine, respectively, the number of bacteria in the fæces fell to seven and ten per milligramme. The total per day thus fell to 35,000 and 50,000, or one one-hundred and-seventy-fifth and one one-hundred-and sixth of the normal number. In the case of man, the dog, and the rabbit, the absence of those species of bacteria which liquefy gelatine, and of moulds was noted during milk diet.

Milk diet exercises its peculiar action not only on the

fæces, but on the entire gastro-intestinal contents, putting the alimentary canal in a condition of partial asepsis. This does not result from any antiseptic power of the milk, since, as is well known, it forms a good nutrient medium for many species of micro-organisms and the coli bacillus readily grows in it. The true explanation is, perhaps, rather to be found in the character of the changes which milk undergoes in the digestive tract. It is readily attacked by the digestive ferments, the products formed are readily absorbed and but a small residue remains, consisting of nuclein. In this connection it is to be remembered that Dr. Vaughan has lately called attention to the germicidal action of the nucleins outside of the body. The failure of bacteria to multiply in the intestinal canal during milk diet may then be due to the lack of nutrient materials suitable for their development, and, further, to the antiseptic action of any nuclein present. From a dietetic standpoint, the value of milk as an accessory food, at least, is apparent in certain gastric disorders attended with the growth of micro-organisms, in acute or chronic enteritis accompanied by diarrhœa, in typhoid fever, dysentery, and a large number of diseases in which the toxic products of intestinal putrefaction are the ultimate causes of the particular symptoms manifested.

Apocynum Cannabinum in Heart Disease.—Dr. Glinski after having proved by experiments on cold-blooded and warm-blooded animals that the root of the apocynum cannabinum contains a strong poison which in large doses paralyzes the heart, and when given in small quantities retards and strengthens its beats, decided to take it himself, as he is suffering from hypertrophy of the left ventricle, with intercurrent attacks of dilatation of the organ, mitral murmur, dyspnœa, etc. (*The British Medical Journal.*) The dose was fifteen drops of the fluid extract three times a day. As he found that all his symptoms disappeared in two days, he gave it also to other patients in the same quantity in cases of palpitation, disturbed compensation, in which strophanthus, and adonis vernalis had failed and digitalis seemed contraindicated. He gives a full account of some of his cases, and summarizes his experience in the following conclusions: 1. The action of the root of apocynum cannabinum is similar to that of digitalis, without being cumulative. 2. In cases of dilatation the fluid extract rapidly diminishes the area of dulness. 3. It increases the daily amount of urine, stops the palpitation, and promotes the absorption of transudations. 4. With the exception of increased pulsation of the arteries of the head, it has no bad secondary effects. It was used either in the form of a decoction (℥ j. to ℥ viij), 3 to 4 tablespoonfuls a day, or tincture (1 in 10), 5 to 10 ♏, three to four times daily, or fluid extract in doses of 10 ♏ to half a teaspoonful three times daily.

A Rare Tumor of the Parotid Gland.—Dr. Schüller, of Berlin, reports the following interesting case in the *Ärztlicher Praktiker*, No. 32, 1894. A lady, twenty-three years of age, had a hard swelling in the region of the right parotid gland. As she said, there had been removed, nine years previous, a glandular swelling at the same place. The new swelling had first developed rather slowly, and only later had it grown rapidly. When she came to Dr. Schüller, March 30, 1894, the tumor was the size of a pigeon's egg, was hard, and apparently blended with the surrounding tissue. It was immovable from its base, and felt like a soft elastic mass imbedded in a tense sac. Close to it and below, could be felt a second, smaller tumor, of the size of a bean. Dr. Schüller operated on April 4, 1894. He found the main tumor situated between the origin and the anterior ascending ramus of the sterno-cleido-mastoid, below, and close to the ear. It was blended with the surrounding tissue. At the base it appeared to be a continuation of the parotid tissue, where it could not be separated from the gland, and entered deeply into the retro-maxillary fossa.

The tumor was carefully dissected from the nerves, vessels, and muscles; unavoidably a part of the parotid had to be extirpated. Besides the main tumor there were removed nine to ten glands, from the size of a bean to that of a cherry. The main tumor presented on transverse section the appearance of a dense fibro-sarcoma similar to those found occasionally in the testicle. The microscopical picture, however, was not that of a sarcoma. There was found an exceedingly dense granulating tissue, rich in cells, which enclosed centres of shrunken and partly fatty-degenerated cells, here and there with isolated giant cells. Cheesy degeneration was nowhere present. The granulation tissue is traversed in some places by extraordinarily thick-walled blood-vessels. Metamorphoses of tissue such as this tumor presented are (according to Virchow) characteristic of gumma formation. The main tumor consisted in its periphery, apparently, of a lymphatic gland which had undergone gummatory change, and the parotid gland itself was gummatory. The other glands showed nothing but hyperplasia caused by simple chronic inflammation. The process was evidently one of hereditary syphilis.

Treatment of Phthisis.—Dr. C. Theodore Williams has presented in *The Lancet* some practical recommendations from thirty years' experience in the treatment of phthisis. After placing sunlight and fresh air as the first and most essential things in the treatment of phthisis, he adds a number of practical recommendations for the relief of symptoms. Cough, he says, should always be treated by promoting expectoration, one of the best forms of expectorant being the effervescing carbonate of ammonia draught night and morning, which will generally clear the bronchial passages for several hours. If there be a good deal of fruitless hacking before expectoration, causing annoyance to the patient, the addition of a few minims of dilute hydrocyanic acid and half a drachm of syrup of poppy or codeia, will do no harm and considerably allay the reflex irritation. Where the cavities are large, or deep, or basic, and consequently require great expiratory effort to clear, combinations of sal volatile and spirit of ether with camphor water, as in the form of the pharmacopœia of the Brompton Hospital, answer admirably, while for old or feeble persons champagne will often serve the same purpose. But the most satisfactory way to reduce the cough of chronic phthisis is by counter-irritation to the chest-wall—best by blistering. It will be found that relief will follow in proportion to the amount of serum drawn by vesication, and fly-blisters or acetum cantharidis, or the strong but very efficient liquor epispasticus, answer the purpose. Night sweats, when they are a mere flux from the vessels or lymphatics, and not a relief of pyrexial processes, ought to be checked, and this can generally be done by arseniate of iron, 1/6 gr. to 1/3 gr., at bedtime, or picrotoxine, 1/60 gr. to 1/30 gr., or nitrate of pilocarpine, 1/16 gr., or the old-fashioned oxide of zinc in from 3-grain to 5-grain doses, which generally succeed and do no harm. Preparations of belladonna and atropine, though they are effectual controllers of night sweats, are less satisfactory, because their continuance for a long period often induces dryness of throat and mouth, dilatation of the pupils, and disturbance of sight accommodation. The treatment of pyrexia depends very much on its cause. Where it accompanies tuberculization it probably will subside of itself when the tuberculous process quiesces, and even if persistent will only prevail in the afternoon. An effervescing saline, with a few drops of tincture of aconite or a few grains of quinine, is all that is then wanted. But pyrexia accompanying acute excavation, or acute excavation and tuberculization, is very troublesome and sometimes quite intractable. Antipyretics, of which there are any number, according to my experience only give temporary relief, and often do harm by depressing the patient's constitutional powers and producing collapse. I have seen the temperature depressed from pyrexia to a subnormal reading by doses of antipyrin or phenacetin, but always with bad results, and after the use of the medicine has been omitted, the temperature has risen as high

as ever before. The great object in the treatment of this form of pyrexia is to keep the patient quiet in bed or lying on a couch, and, if possible, in the open air, *à la* Dettweiler; to feed him frequently; and to supply alcohol to repair tissue waste, while administering only sufficient antipyretics to keep the temperature within moderate bounds. Quinine in small doses, in effervescence, before the rise or during the rise of temperature, will often suffice, or Henn's well-known pill twice a day. Anyone who studies the phenomena of fever knows that temperature rise is only a small portion of the process, and that by lowering the chart we do not get rid of the factors of heat production or of the wear and tear of the tissues; and so our best line is rather to keep up strength and weight by a frequent supply of food. The diarrhœa which accompanies tuberculous ulceration may be checked by sulphate of copper and opium, if the ulcerative process be limited in extent; but if there is much ulceration, and it is the ileum and large intestine which are involved, injections are best. The enema opii of the British Pharmacopœia is excellent under these conditions, but I have seen a few of the most obstinate cases yield to large injections of linseed tea, which has a most soothing influence on the irritable ulcers.

Clinical Department.

VARICOSE ULCERS SUCCESSFULLY TREATED BY A NEW AND PAINLESS METHOD.

By J. WILL SUMMERS, M.D.,
HAMMOND, ILL.

Mrs. B——, aged fifty-six. History of struma during childhood. Is the mother of two children. General health fair. Veins much dilated from knees down, with very poor cutaneous circulation. Has suffered from chronic ulcers for many years.

Was first seen by the author December 8, 1893; at that time she presented one or two ulcers that had not been healed for five years, and others of more recent date. The manner in which these ulcers appear is as follows: First, a macule which soon becomes papular, and later capped by a vesicle which soon ruptures, liberating a bloody serum. The mass continues to enlarge, forming an ulcer the size of a quarter of a dollar or even larger. During the formation and growth of this ulcer it is highly sensitive and constantly painful. At the time of my first visit, after cleansing the ulcers with a solution of soda bicarbonate, I applied a solution of methyl violet—care being taken to bring it in contact with the entire area of the base and margins. After allowing it to dry, each stained ulcer was covered by a small bit of absorbent cotton. Mechanical support was furnished by Martin's elastic bandage. This entire procedure was repeated every morning. On the second or third day it was evident that the healing process had begun.

At my first visit a new and very painful ulcer was forming on the left leg. This I treated for a few days with subnitrate of bismuth, boracic acid being tried and found too painful. No benefit was derived from either. Pain was constant; on the third or fourth day I painted it with methyl violet, and to my great surprise and the patient's comfort, the pain at once ceased.

After two or three daily applications the sensitiveness had so far subsided as to render bandaging of that part of the leg possible. All of the ulcers were thenceforth dressed daily. At the appearance of any new vesicle I applied methyl violet, which prevented further development. Internal treatment consisted of potassium iodide, grs. x. to xv. t.i.d.

The patient continued her duties as housekeeper, and at the end of six weeks only cicatrices remained to mark the site of her former ulcers.

An ideal solution, as used by Dr. M. F. Coomes, of Louisville, Ky., in the treatment of lupus, is made by using Merck's methyl violet, grs. v., aqua destillata, ℥ ij. This forms a harmless and entirely painless application. I would not hesitate to use it on any chronic ulcer.

The bandage has been worn most of the time, and to this date there has been no return of the ulcers.

To put at ease the mind of anyone who may think the internal treatment and bandage are deserving all the credit, I will state that both had been used, with the accepted local treatment, with but little success by other physicians, at intervals, for several years. Also ulcers that began forming under the bandage were invariably arrested in their course by methyl violet. Its action we believe to be germicidal and highly astringent.

October 6, 1894.

PASTILLES AS A SUBSTITUTE FOR GARGLING TO PREVENT DIPHTHERITIC INFECTION.

By A. ROSE, M.D.,
NEW YORK.

We have to confess that the control of the course of diphtheria is very limited. In view of this fact we are reminded of the noblest of our duties, the duty of prophylaxis. It is true we are experimenting with antitoxin, and it is to be hoped that we shall succeed in securing immunity against diphtheritic infection by means of inoculation of this new serum, but as long as this, our sanguine hope in regard to antitoxin, is not yet realized, we have to welcome every proposition to guard against diphtheritic infection.

It is generally understood that a healthy pharynx is of as much importance in regard to diphtheria as a healthy stomach is in regard to cholera. All writers on prophylaxis against diphtheria speak of the importance of keeping the mouth and throat in aseptic condition. Among the measures to this end gargling "the throat" has always been considered to be a prominent part. As everybody can convince himself by experimenting with some colored syrup, gargling is an illusory measure as far as the disinfection of the pharynx is concerned; except when it is done in a certain skilful manner, as only adults can do it after having been well instructed, not one drop of the gargle enters the pharynx, not even reaches the tonsils.

Dr. A. Szara[1] recommends therefore to disinfect mouth and throat with lozenges composed of resina guajaci, saccharin, etc. He experimented with these and found that they possessed germicidal power, that they actually did disinfect the mouth and pharynx, that the aseptic condition lasted for one hour. He does not give the proportion, at least I did not find them given in the extract of his paper which came to my view. Messrs. Eimer & Amend, the drug firm, made lozenges for me which have the following formula:

℞. Resinæ guajaci	0.75
Saccharine	0.01
Sacchari et succi liquiritiæ	0.75

They are agreeable to take, and may also serve in all cases of pharyngitis where tinctura guajaci is generally given. They are certainly more palatable than the tincture, and much more serviceable than those lozenges of the London Throat Hospital made with red and black currant jelly and containing only a small part of resina guajaci. Dr. J. Bergman[2] recommends lozenges which he calls diphthericidium pastilles, which have the following formula:

℞. Thymol	0.002
Sodæ benzoit	0 02
Saccharin	0.015
And some gum-like constituent.	

Either of these pastilles recommends itself to be given to our little ones going to school in place of candy or chewing-gum.

[1] Ueber eine neue Methode die Mund- und Rachenhöhle zu desinficieren. Pester med.-chir. Presse, 1894, No. 6.

[2] Un neuer Vorschlag zur Prophylaxe gegen diphtherie. Algm. med. Central. Ztg. 1894, No. 1.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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SOME MINOR MEASURES IN THE DIAGNOSIS AND TREATMENT OF DYSPEPSIA.

No doubt the conscientious general practitioner feels that he is often very much behind the times in his diagnosis and treatment of some gastric disorders. Medical literature is full of elaborate descriptions of the different kinds of dyspepsia, of hypoacidity, hyperacidity, motor disturbances, catarrhal disorders, etc. The methods of investigating the stomach have also become greatly refined, the test meals, the washings, syphonings, and electric explorations appear very formidable to the doctor, and still more to the patient. We do not in the least wish to deprecate the use of all the methods of modern research and treatment. It is always best to know exactly the facts, and not guess at them from data furnished by the tongue and descriptions of subjective states. Still Dr. Dujardin Beaumetz has struck a fruitful topic in a recent lecture on "Minor Methods of Diagnosticating and Treating Dyspepsias" (*Bulletin général de la Thérapeutique*). Exact science cannot always be applied, he says, and there exist a number of minor measures which are always useful and often sufficiently effective. In order to determine the kind of dyspepsia from which a patient suffers, he should be made to take a few "test meals." The best meal for this purpose is the breakfast. This should consist of coffee or tea, with milk and a little sugar, and one or two rolls or slices of bread without butter. The quantity of liquid should always be the same and never over a pint. With a normal stomach the repast will be digested unnoticed. If, however, two hours after eating there is a sense of heat in the stomach, and a burning and acidity, then the patient is suffering from hyperacid dyspepsia. If, on the other hand, there is abundance of gas, a sensation of weight and fulness, and of food being still in its place, then there is hypoacid dyspepsia. When there is at the end of a quarter of an hour a sensation of epigastric pain, which gradually increases, then there is probably some gastro-duodenal irritation or inflammation. Finally, the patient may suffer from cramps, pains, and even vomiting, and then there is probably some muscular and nervous disorder of the stomach.

Beaumetz insists that in hyperacidity the heat and burning are most severe three or four hours after a meal, and are oftener felt at night between 11 P.M. and 1 A.M. In hyperacidity, also, the ingestion of food often relieves for a time the disagreeable sensations. A knowledge of the occupation and habits of the patient naturally helps greatly in diagnosis. Beaumetz thinks that dyspeptics ought to sleep on the right side, because this facilitates the passage of food from the stomach into the duodenum. To promote the same end he advises the drinking of a cup of very hot water, or preferably, some aromatic infusion, such as chamomile or anise, etc., an hour or an hour and a half after eating. He does not recommend mineral waters charged with carbonic-acid gas, but does advise still alkaline waters taken half an hour before meals in small doses. Finally, massage of the stomach is recommended, both to stimulate the stomach walls and the secretion of gastric juice.

THE OYSTER AS A TYPHOID FEVER CARRIER.

A YEAR ago or more, reports were rife of cases of typhoid fever in Berlin, due to eating raw oysters. Not much attention was paid to the story at the time, because no positive verification of it was made.

Quite recently the matter has come up in a most striking way, through the development of an epidemic of typhoid fever among the students at Wesleyan University, Middletown, Conn. We give elsewhere a report of this epidemic which was published in *The Evening Post* of November 19th. While we do not, as a rule, place much confidence in newspaper accounts of medical investigations, the present one bears the marks of being carefully written and authoritative. Thirty cases occurred altogether, with one death. All were among college students who had attended certain society suppers where raw oysters were served. Among the students who attended other suppers, where the oysters were cooked, no typhoid developed. The oysters had been placed by the oysterman in the tide-water shallows of a river near New Haven. Typhoid fever had been present in the family of the oyster-grower, his house was near the river, and his sewage drained into it. This is the extent of the evidence so far as we can learn. No typhoid bacilli have yet been found in the oysters still present in the river, but this branch of the investigation is unfinished.

On the other hand, it is known that typhoid fever germs do not live in salt-water, and furthermore, it is a fact that just now typhoid fever is unusually prevalent in certain parts of New England. Thus, for the week ending November 8, 1894, the percentage of deaths from this disease on the total deaths was, in Springfield, Mass., 7.69; in Newton, Mass., 25; in Pittsfield, Mass., 33.33; in Newburyport, Mass., 25; in Brockton, 12.50, and in New Bedford, 11.76. The percentage in New York was only 3.00, and in Philadelphia, 1.62. There is perhaps, therefore, some unusually important epidemic influence that must be taken into consideration.

If one looks over the mortality lists for the different large cities of this country, he will find that there is no excessive prevalence among the seaboard cities, where the raw oyster is consumed in enormous quantities.

The consequences of establishing the fact that the raw oyster may be a means of propagating typhoid fever, would be very far-reaching and would affect not only consumers, but would destroy in a measure an extensive and important industry. The matter should, therefore, be investigated with the greatest care.

THE SUNNY SIDE OF PHYSIC.

We have discovered in *The Lancet*, and published elsewhere, "The Song of the General Practitioner." Our readers will find it a rather lugubrious refrain, yet they will probably say that it tells the truth. Nearly all poems on the medical art are written in the same pathetic key. It is always the poor doctor who works hard and continuously, who never rests or sleeps, or gets paid for his trouble.

There must be some truth in it all, but the public who read might legitimately ask why, if the doctor's life is such a depressing one, do the doctors' ranks continue so crowded? The more we deplore our lot, the more do the youth of the land select it. Is it the spirit of altruism, or is it that in the halcyon days of youth such things as hard work and poor pay and no final rewards, furnish no terrors?

Or is it that the public and the doctor know the picture to be overdrawn? We suspect that the latter element is a very potent one in directing young men into the rugged ways of medical life. Some doctors work hard all the time, and all doctors work hard some of the time, but all doctors, he thinks, do not work hard all of the time. Besides, he sees that many of the profession get comfortable incomes and live in comfortable homes. They are not waked up every night to drive ten miles in the darkness and cold. A great many of their bills are paid; a great many patients are grateful and loyal, and sound their favorite physician's praises in a way that is solacing to vanity and provocative of larger practice. The average duration of life of the doctor is not quite as long as that of the clergyman—the good die young, or at least younger; but still, if he has good luck, he may grow old, for some doctors do reach a green age. There are, in fact, a great many pleasant things in the doctor's life, and we trust that some time a school of more cheerful medical poetry will arise than that which exists at present.

THE REFRACTING OPTICIAN.

The optician has given a great deal of trouble to our medical brethren of Philadelphia. At rather frequent intervals in the past we have read most denunciatory accounts of his demoralizing and unethical work. Our esteemed contemporary *The Medical News*, which generally discusses the problems of human life with great philosophy, has little patience with the optician—that is to say, if he refracts. For it is the so-called R. Os., or refracting opticians, who are really to blame. We have been receiving circulars from this class of practitioners in New York recently and have learned some particulars of their deadly work. It seems that the R. O. makes the following examination:

"For hypermetropia, myopia, astigmatism, presbyopia, heteraphoria, corneal opacities, lens reflex, vitreous, fundus oculi, and visual acuity."

This really does seem to go beyond the simple limits of refraction and physics. The R. O. offers to determine the condition of the cornea, of the vitreous, of the retina, and of the eye-muscles. He offers rather too much for the price of a pair of glasses, particularly when the doctor's own family gets them at half-rates.

It may be seriously questioned whether the R. O. is not practising medicine if he diagnosticates a corneal opacity or an optic atrophy. He must draw the lines much more closely or be put in the lists of the unlicensed.

There is no reason, however, why a modest and genuine refracting optician should not perform a useful service to society. Many people suffer from hypermetropia, myopia, and astigmatism who cannot afford to go to a specialist. They must, therefore, either rely on their family physician, go to a dispensary, or to the R. O. Now we advise such to go to their family doctor and let him decide whether the optician is sufficient, and we advise the family doctor never to send his patient to the refracting optician who proclaims his ability and readiness to diagnosticate almost every chronic abnormality of the eye.

News of the Week.

The Moxon Medal of the Royal College of Physicians.—The Moxon Medal of the Royal College of Physicians, for distinguished services in clinical medicine, has been awarded to Sir William Jenner.

Dr. Timothy M. Ingraham, one of the best-known physicians in the suburbs of Brooklyn, died at his home in Flatbush, on November 4th, of cerebral apoplexy. He was born in Amenia, Dutchess County, in 1821. He received his collegiate education at Wesleyan University, Middletown, Conn., and the degree of M.D. from the Vermont Medical College, in 1847.

Typhoid Fever from Oysters.—There is an outbreak of typhoid fever now at the Wesleyan College in Middletown, Conn., in which the contagion appears to have been carried in oysters. According to a despatch in the *Evening Post* the story of the disease is as follows: The first case developed on October 22d, the student being the son of a physician in Vermont. The patient was taken home and died. This case was followed rapidly by others—one fatal—until they now number about thirty. They began to develop about ten days after the initiations of six societies at Wesleyan, a supper being given by each. As all the sufferers had attended these suppers investigation was turned in that direction. The Middletown city water and also the water from a well on the campus were examined and both found to be innocuous. The milk used at the initiation suppers was next looked into and was found to be perfectly wholesome and obtained from farms where the conditions were healthful. It was next found that, while at all six of the suppers oysters were used, at three only were raw oysters supplied, and that all the victims had partaken of them. These oysters were bought from a Middletown dealer, who obtained them from an oyster grower living on the east shore of the Quinepiack River, near New Haven. He, like the many other growers owning oyster establishments on the Quinnipiack, is accustomed to take the oysters from the deep waters of the Sound and lay them down before opening for some twenty-four hours in the shallows of the river. This makes the oysters absorb the fresher water of the stream, swells and

whitens them, the technical phrase among the oystermen being "giving the oysters a drink." The next discovery was that the oyster-grower's wife had died of typhoid fever about the time of the outbreak at Wesleyan, and his daughter also has been ill of the disease. His house stands not far back from the river, and its short drain empties into the latter near the place where the oysters are bedded temporarily. In addition to the Wesleyan students there were visitors from Yale and Amherst, and two of these, one from each college, are also ill with typhoid. The same paper from which we have quoted reports that a gentleman in New Haven recently gave an entertainment at which raw oysters were served, and six of his guests are now suffering from typhoid. The bed of the Quinepiack River is extensively used for oysters by the growers of Fair Haven and East Haven, which for many years have been centres of the Connecticut oyster trade. Many sewers empty into it, and it is to be hoped that the discovery of the source of the Wesleyan outbreak may lead to the discontinuance of the custom of temporary bedding and to taking the oysters directly from the main beds in deep water.

Dr. Zacharin's Future.—Dr. Zacharin, the eccentric Russian physician who attended the Czar Alexander III. during the greater part of his illness, has not a very cheerful future to look forward to. The present Czar Nicholas is said to be so displeased with Dr. Zacharin's conduct that he has suggested that he confine his practice henceforth to Siberia.

A Bon-mot of Dr. Holmes.—Dr. Arthur P. Perry writes to the *Boston Medical and Surgical Journal*: "A *bon-mot* made by Dr. Holmes at the time one of his sons was born, was lately written out for me by a physician who was a student at the time; and, as it is as good as all Holmes's sayings were, and I think has never been in print, I thought it might appear in the *Journal*. I give it *verbatim* as it was sent me. 'In the forties Dr. Holmes was one of the instructors in what was known as the Tremont Medical School, which gave instruction to quite a large number of students between the lecture terms of the Harvard Medical School. Usually prompt, we were one day surprised by his non-appearance at the beginning of the lecture-hour, but we waited. Finally he entered the room, hurriedly glanced around with a smile and said, "Gentlemen, I know I am late, but there is a little stranger at my house." And then with an expression such as only Holmes's face could assume, he continued, "Now can any one of you tell me what well-known business firm in Boston he is like?" There was no answer. "He is Little & Brown," said the doctor, with a twinkle in his eye.'"

New York State Medical Examinations.—At the September examinations for State medical license by the board representing the Medical Society of the State of New York, the number of candidates was seventy-six, of whom fifty-one were successful and twenty-five unsuccessful.

Tuberculous Infection in a Laboratory.—We regret to hear the report that Dr. John M. Byrom, Director of the Bacteriological Department of the Loomis Laboratory, is suffering from tuberculosis which he contracted by inhaling its germs while engaged in his professional work.

A Successful Operation.—Dr. Pulser: Did you remove old Bonder's vermiform appendix?

Dr. Cutter: Yes.

Dr. Pulser: And was there anything in it?

Dr. Cutter: A cold two-fifty for me.

The Ceremony of Unveiling the Statue to Claude Bernard took place on October 28th. Many members of the Academy of Sciences, and all the professors and students of the Lyons Faculty, besides many notabilities, military and political, were present. The statue, the work of Aubert, a sculptor of Lyons, represents Claude Bernard in a standing position, holding a lancet in his hand and inoculating a frog with curare.

Anxiety as a Cause of Granular Kidney.—It is interesting, in relation to the ailment of the Czar, to recall a paper read by Professor Clifford Allbutt at the annual meeting of the British Medical Association, at Sheffield, in 1876. The subject he took up was "Mental Anxiety as a Cause of Granular Kidney," and by an analysis of his case books he showed what an abnormally large proportion of the patients showing symptoms of granular kidney had been subject to the depressing influence of prolonged anxiety. He says: "During the last two years I have made notes of thirty-five cases of granular kidney occurring in private practice, and I find a marked history of mental distress or care, or both, in twenty-four of them." This is a large proportion, even if we admit that the pushing inhabitants of West Yorkshire worry abnormally concerning this world's goods. Several illustrative cases are given, and one especially in which as a consequence of an unfortunate investment, a man, in a good position, for three years "went to bed night by night ignorant whether he might not be gradually drained of his all." Dickinson is in some sense in accord with Allbutt on this question, although not so positive. Prolonged mental disturbance, anxiety, or grief as a cause of granular kidney is, he says, "perhaps problematical; the mode of its operation is not obvious, but must be surmised as through the nervous system. A lowering of nervous force is to be recognized at least as predisposing to every form of albuminuria. I have seen so many instances in which granular degeneration has been immediately sequent upon trouble that, in the absence of other causes, I am fain to conclude that mental conditions are sometimes concerned in its production."—*British Medical Journal.*

A New Method of Producing Local Anæsthesia.—At the meeting of the Hufeland Society, on October 25th, Professor Oscar Liebreich presiding, Dr. Schleich read a paper on, and demonstrated, what he terms a new method of anæsthesia, called "Infiltrations-anæsthesie." Dr. Schleich has for some time made use of this new form of local anæsthesia, not for trifling operations only, but for complicated ones, such as laparotomy, etc. He uses a very weak solution of cocaine—1 per mille. The cocaine is not dissolved in distilled water, Liebreich having shown in his inquiry on "anæsthetica dolorosa" that distilled water injected subcutaneously has a toxic effect; the solvent used is the physiological salt solution of about half the usual concentration, that is, about 0.2 to 0.3 per cent. of common salt. Schleich's method is as follows: A small spot of the skin near the field of operation is rendered insensible by chloride of ethyl, and here a few

drops of the cocaine solution are injected. At the spot of infiltration a bulla immediately arises, which is absolutely without sensation. Pushing the point of the syringe through this area of insensibility, Schleich again injects a few drops; another bulla arises close to the first, and proceeding from bulla to bulla round the field of operation the whole is infiltrated and rendered quite anæsthetic. This is done extremely quickly, as Schleich showed in the case of a man with a large syphilitic abscess on his arm, who was operated on before the meeting. The man felt absolutely no pain; and the duration of the operation, including the anæsthesia, was only eight to ten minutes. Dr. Schleich said that he had employed his method of anæsthesia for about three thousand operations with unvarying success, and without any bad after-effects. It does not seem to us that the method presents any great elements of novelty.

A French Congress of Internal Medicine was recently held at Lyons, October 25th to 29th. The organizers were MM. Potani, Lépine, and Bard. This is the first national medical meeting ever held out of Paris, though Congresses of Surgeons and of various specialists have had successful meetings for several years. The French physicians are trying to get away from the complete dominance of Paris in medical matters.

Massage Establishments and Prostitution.—The *British Medical Journal* presents a report on London massage establishments couched in words of what it evidently considers "decent plainness." One part of the report is as follows:

"In the summer months the establishments are closed for the most part. When London fills up again they become active. We will leave for another article the explicit statements which we have to make as to the nature of the practices which go on in many of these places; but for the present it may be sufficient to state shortly what kind of place the casual inquirer will find if he goes for the first time to some of the addresses we refer to. He will find probably a flat of four or five rooms, in a fashionable West End locality. In many cases the establishment is on the first floor over business premises. The approach to it is guarded by various arrangements for privacy. As the visitor enters, an electric bell rings automatically and he will find himself received in a well-furnished room by a lady of middle age, with a certain capable air of respectability. She will make no inquiry as to his name, and probably none as to his complaint. He will be invited, with little loss of time in preliminaries, to adjourn to a room luxuriously furnished, where he will find a bed or couch spread with blankets. He will be informed, unless it is assumed that he knows it already, that the terms are for an hour a guinea, but that he can stay as long as he pleases by the same rate. In some instances it will be suggested to him that it would be a good thing to have a bath first and massage afterward. It will be assumed, as a matter of course, that he intends to have 'general massage,' that he will want a young lady to do it, and that he will undress completely. Madame will then leave him to his own devices. In two or three minutes the lady assistant will appear, and the 'treatment' will be duly administered. He will not be interrupted, nor, in fact, will he see 'madame' again until he pays her as he leaves the house. This state of things in itself will be admitted by everybody to be sufficiently risky. What it leads to we shall feel it our duty to indicate with decent plainness in another article."

It does not seem as though any sequel to the above was really needed. Such establishments are freely advervised in Chicago daily papers, especially since the Lexow Committee's work.

New Medical Colleges.—A new medical college was organized the other day over in Alabama. Also a new one at Fort Worth, Tex. About one month ago two members of the faculty of one of the Nashville schools resigned their chairs on account of personal differences, and are now industriously at work "organizing another school." More schools than this have been established from no better motive. Out in St. Louis the opening of a new medical college has gotten to be almost a joke. In a word, there is absolutely no need for these colleges. There is every need, God knows, for better medical education, but the way to accomplish it is not by increasing the number of colleges. Since 1880 there have been more than fifty medical schools chartered in this country, a great many more than there was any necessity for. Fortunately several have died. There are 110,000 doctors in the United States. More than 3,000 belong to the faculties of medical schools. Of this number Ohio, with 16 schools, contributes 408; New York, with 12 schools, 540; Missouri, with 16 schools, 405; Maryland, with 7 schools, 170; and Tennessee, with 8 schools, 160, etc. In all we have one medical school for every 430,000 of our population, or one for every 730 physicians.—*Atlanta Medical and Surgical Journal.*

Safeguards against Small-pox.—Dr. J. M. Worthington, health officer of Anne Arundel County, says the county has adopted a complete system to detect the approach of small-pox and to prevent the spread of the contagion. He said: "To provide against an epidemic of small-pox the county commissioners, at a recent meeting, appointed two vaccine physicians for each election district, making fourteen for the county. With this wise provision it would be difficult to have a case in the county without its being at once known and attended to. Isolation, disinfection, and vaccination are the best-known means to lessen the disease. The family physician is the man of all others to commence the work, and if he does his duty there will be little occasion for panic or alarm. As a rule, he knows what to do and how to do it. In some special cases he may need the assistance of the district vaccine physicians for the poor and unprotected. He should at once notify the health officer of his county, whose duty and pleasure it would be to report to the State board of health. It should be a rare case of emergency or necessity to appeal for aid or comfort to the Surgeon-General's office at Washington, D. C. A recent notable small-pox scare, affecting the family and their physician, a man of ability and high personal character, could have been nipped in the bud. A messenger on foot or horse, a railroad, double track, all-steel rails, United States mail, telephone, and telegraph, all should have been exhausted to reach the doctor and ascertain the facts before the slander was spread upon the wings of the wind."

Errata.—Dr. R. Abrahams writes: Will you kindly correct the following misprints in the RECORD of Novem-

ber 10th. Page 604, first column, fifteenth line from top, read "tubular" for "tubercular." On the same page, twentieth line from bottom read "observers" for "observer." Page 599, second column, ninth line from bottom, read "grave" for "great."

Randall's Island Hospitals, New York.—Dr. Charles W. Allen has been appointed Visiting Dermatologist to the Randall's Island Hospitals.

Professor Dr. Klebs, of bacillus fame, is on a visit to this country, and is at present the guest of Dr. Karl von Ruck, of Asheville, N. C.

Longevity.—Our esteemed contemporary *The Annals of Hygiene* makes the astounding assertion, in its issue for July of this year, that one person out of every four thousand born reaches the age of one hundred years. This may be so in the home of our contemporary, but elsewhere life is too rapid for any such blissful extension of it as this.

"The Burst-up of Listerism" is the way Dr. Donald Campbell Black, of Glasgow, speaks of the modifications which have taken place in the practice of antiseptic surgery. He apparently harbors no kindly feelings for Sir Joseph Lister, though at this distance we are unable to guess the cause of his enmity. He relieves his mind in a long tirade against the one to whom, more than all others, the world owes the principle of antiseptic surgery, and closes with the following splenetic deliverance:

"I read in a recent number of an influential medical contemporary that Sir Joseph Lister had been awarded the Albert Medal of the Society of Arts 'for the discovery and establishment of the antiseptic method of treating wounds and injuries (what is this?), by which not only has the art of surgery been greatly promoted and human life saved in all parts of the world, but extensive industries have been created for the supply of materials for carrying the treatment into effect.' If it be 'science' to give a transient impulse to the manufacture of 'putty' and calico, then I have certainly misinterpreted the term 'science' during all the years that I have lived."

A Medical Library Association has been recently organized in Grand Rapids, Mich. The purpose of the Association is the formation of a reference library upon medicine and allied sciences. The new organization starts out with a membership of about fifty. One of the features of the Association will be the admission of non-residents to membership, whereby for a small annual fee, physicians outside of the city may avail themselves of the advantages of the library. A competent librarian will be secured, and the most approved methods of cataloguing and indexing will be made use of. Books and journals are being liberally donated by those interested in the project, and the success of the enterprise is assured. The following officers have been elected: Dr. G. K. Johnson, *President;* Dr. S. G. Milner, *Vice President;* Dr. W. A. Dorland, *Treasurer;* Dr. Reuben Peterson, *Secretary.*

South Carolina State Medical Examining Board.—The second meeting of this Board, created by act of the Legislature in January last, was held at Columbia, October 9th and 10th. Of fourteen candidates four were rejected. The next meeting of the Board will be on the fourth Tuesday in April, 1895. Anyone wishing to enter the State to practise, between the meetings of the Board, must appear before the chairman and secretary to be examined, and upon their being satisfied as to his qualifications will issue to him a temporary license, which license is only good until the next meeting of the Board. The Secretary of the Board is Dr. C. F. McGahan, of Aiken, S. C.

Cannot Experiment on the Body of Wilson, the Murderer.—Attorney-General Hancock has written an opinion in answer to an inquiry from Governor Flower in regard to the resuscitation of Wilson, the murderer. The opinion says: "In my judgment neither the Governor of the State, the Superintendent of State Prisons, nor the Warden of Auburn Prison has authority to deliver the body of a convict, after the execution of the death penalty and a post-mortem examination, to Dr. Gibbons or any other individual not a relative of the person executed. If the body is not claimed by a relative, it becomes the duty of the authorities in charge to bury it, and not to deliver the same to any individual for the purpose of experiment."

The New York Society for the Relief of Widows and Orphans of Medical Men elected these officers lately: *President,* Dr. Ellsworth Eliot; *Vice-Presidents,* Drs. David Webster, J. H. Emerson, and Charles H. Teale; *Treasurer,* Henry Tuck. President Eliot said that the funds of the Society had been increased almost $60,000 in the past year.

The New York Pharmaceutical Club.—Fifty members of the Pharmaceutical Club sat down to their first Club dinner at 7 P.M., November 21st, in their pretty new rooms at 37 East Nineteenth Street. No papers were read nor speeches made. The Club was incorporated in August, and has now one hundred and sixty-five active members. Its membership will be limited to the number of pharmaceutical men in good standing in the drug business who care to join.

Papers on scientific subjects connected with the drug business will be read every Thursday. The officers are as follows: *President,* Robert J. Bell; *Vice-President,* John W. Bachelder; *Treasurer,* Frank A. Barnes; and *Secretary,* Velie A. Wood.

The Proportion of Successful Candidates in the Medical Staffs of the Army and Navy.—During the year ending June 30, 1894, thirty-seven candidates for the medical staff of the army received permission to appear for examination before the Medical Board; of this number five were found qualified. In the navy, thirty candidates were invited to come up for examination, of which number three only were found qualified physically and professionally for appointment to the rank of assistant surgeons. There are eight vacancies in the naval medical staff; in the army medical staff there are none, owing to the action of Congress in reducing the number of assistant surgeons to one hundred and ten.

Dr. Reid Alexander, of Topeka, Kan., died in that city, in October, of perforation of the bowel. He was a graduate of the Medical Department of the University of Pennsylvania, in the Class of '85, and at the time of his death was President of the Topeka Academy of Medicine and Surgery.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 1, 1894.

D. B. St. John Roosa, M.D., President, in the Chair.

Perkins's Tractors.—Mr. Isaac Wood, of Rahway, presented to the Academy, through the Chairman of the Library Committee, Dr. Grandin, a set of Perkins's tractors, an instrument at one time in use for the cure of disease.

Wanted, $100,000; Half of it Immediately.—Dr. Grandin reported gifts of books to the library since last spring. He then added that the term of office of the present Committee on Library was about to expire, and they wished before retiring to make another urgent appeal to the public for an endowment fund. The library was as free to the use of the public as to the profession, yet the latter had out of their own pockets erected the best stack-room in the country, and the public, especially the wealthy portion, were now urgently invited in their own interest to contribute before the first of January $50,000 of the much needed endowment fund of $100,000 dollars.

Library Hours Lengthened.—The library will hereafter be kept open until 10.30 P.M., until time shall show whether use after 10 P.M. will justify the added expense.

Question of Dues.—Dr. A. M. Jacobus gave notice on the part of the Council of an amendment to the by-laws, providing for reduction of dues of members residing in the State, but outside of the counties of New York, Kings, Queens, and Westchester, to $5 a year, the dues in the counties named remaining as at present, $20 a year. The unfairness of taxing the more distant members equally with those residing near the Academy, with its library, was self-evident.

The President announced that the anniversary discourse would be delivered by Dr. Charles L. Dana, Wednesday evening, November 28th. The profession who have friends among the public who may feel some interest in the Academy are requested to send their names to the Librarian, Mr. Browne, who will forward them cards of invitation. This, the President said, was one means for making the public acquainted with the work of the Academy and with its invaluable services to it. It was wonderful how little most of the sixteen or eighteen thousand citizens who, out of the total two millions, constituted the generous donors to worthy public purposes, knew about the Academy. If they were informed of its catholic spirit, of the fact that it was not a private medical school, that it was established in the interest of the public welfare, and opened its library to the use of all, he thought the endowment fund for which the Chairman of the Library Committee had made so eloquent an appeal would be forthcoming at once.

Intra-lobular Occlusion Jaundice.—Dr. William H. Porter read a paper with this title, which implied that the jaundice was due to occlusion, but not to a form of occlusion, such as pressure by a tumor, after the bile had entered the bile-ducts. In order to elucidate the subject he outlined the minute anatomy of the hepatic lobules, the mechanical processes connected with the secretion of the bile, and also his views of the chemical and physiological processes involved in the same act. To start with, he rejected the old explanation of jaundice, based on the view that the constituents of the bile were reabsorbed into the blood.

The mechanism connected with the production of bile was based on the minute anatomy, as already suggested. Masses of protoplasm in the form of epithelial cells in the acini by virtue of a function peculiar to themselves secreted the bile from the blood brought to the locality through the portal system, the bile thus secreted entering the radicles of the bile ducts, and being finally carried to the duodenum. The bile was made from proteid compounds, during which oxygen brought from the lungs consumed carbohydrates and evolved heat, and it was by the influence of the heat that the nerve-terminals were stimulated and enabled to perform their function. During the act the cells were alternately swollen and relaxed, but when abnormally irritated by toxic agents, such as might gain entrance to the portal circulation in the form of chemicals or bacterial products, they remained unnaturally congested, their nutrition was impaired, their function interfered with, and they underwent retrograde metamorphosis. In this abnormally swollen state the masses of protoplasm were forced into the primary radicles, which thus became occluded. As it had been proven that the blood-vessels could not absorb the biliary constituents, there remained but one channel through which they could enter the circulation, namely, the lymphatics. Passing from the hepatic lymph-channels into the thoracic duct, they finally reached the general circulation and were carried to the different parts of the body, and unless eliminated they stained the tissues and caused jaundice and pathological changes in other organs. The kidneys took a principal part in the elimination of the bile constituents. There might be various degrees of intra-lobular occlusion jaundice, depending upon the amount of toxic agents absorbed from intestinal indigestion and decomposition, etc., and the chronicity of the case would depend upon the continuation of the active cause and the change induced in the liver-cells. There was never complete occlusion of all the biliary radicles, but often sufficient to cause various degrees of jaundice. The diagnosis of this form of jaundice was to be made by excluding other forms of mechanical obstruction lying between the biliary radicles and duodenum. The prognosis was usually good in acute cases, especially in persons of good general health whose attack had been brought on by temporary indigestion. Where the kidneys were badly damaged, the prognosis was unfavorable. Much depended upon the treatment.

The author followed the circle of injurious results of intra-lobular occlusion jaundice, a chief one being the depriving of the intestine of a fluid necessary to perfect digestion and antisepsis—the bile. The nutrient pabulum going to the various organs of the body became intermixed with a toxic principle which interfered with their proper nutrition, a fact which gave one indication in treatment. One must look to the diet, to artificial digestives, to intestinal antisepsis, to sunlight and exercise, to hepatic stimulants, to the excretory functions. The digestive system must not be overtaxed by either too much food or food of wrong quality. The author had found by experience the following diet suitable to many cases, according to their severity: For breakfast, two ounces of wheat bread, two eggs, eight ounces of milk, with a little butter, making a total of fourteen ounces. For the mid-day meal, three ounces of wheat bread, a little butter, seven ounces of meat. In the evening, two ounces of wheat bread, a little butter, eight ounces of milk, seven ounces of meat. Before retiring, eight ounces more of milk. If milk could not be tolerated, use a fermented milk. Fruits and vegetables should be avoided because they were prone to excite, by their fermentation, abnormal decomposition of proteid compounds and development of toxic substances.

Artificial digestion for a time within the alimentary canal was best aided by ox-gall and pancreatic extract given before meals, and hydrochloric acid and pepsin after meals. In some cases an additional intestinal antiseptic might be called for. Give some laxative or cathartic to overcome constipation and prevent toxic absorption. Sluggish action of the heart and circulation was to be met by muriate of caffein and strychnia. The biliary radicles were best reached by calomel or bichloride of mercury and arsenic.

Dr. Alfred L. Loomis was called upon to open the discussion. He believed Dr. Porter had presented to us the more advanced, the more recent views with re-

gard to the histology and physiology of the hepatic lobules, and he had no criticisms to make on that part of the paper. When it came to the general question of jaundice, of course we were entering upon a subject which had been discussed from very different stand-points and with very different ideas in the minds of those who had taken part. From the time that he began its study as a medical student, it remained obscure to him until he came to take the position, as he did long ago, that there was no jaundice which was not obstructive. He believed that was the position which we were compelled to take even to day. The question then arose, just where was the obstruction in any given case? It might be outside the liver, it might be internal, along the larger ducts, and it was difficult to exclude obstruction at times along the smaller ducts. For instance, there might be a catarrhal jaundice without evidences of catarrh on the intestinal side of the duct, in which event it would be difficult to say just where or how far up the catarrh existed.

Regarding infectious jaundice, it had seemed to him for a number of years that the only satisfactory explanation lay in the hypothesis that the function of the liver-cells was interfered with in some way. He need only mention the different forms of degeneration of the liver-cells, and would say that the author's explanation of the manner in which these cells obstructed the radicles seemed clear and satisfactory; that is, that the cells themselves became the obstructive cause of the jaundice, and that when such obstruction arose jaundice was brought about by the entrance of bile products into the circulation through other channels than the hepatic ducts, and by other means than reabsorption into the blood. The symptoms of such obstruction were made evident by influence on the nervous system and in icterus before local changes took place in special organs, as in the kidneys.

While listening to the reading of the paper the query had suggested itself to his mind whether in all forms of obstructive jaundice, including cases in which the obstruction was in the larger ducts, the icterus was not primarily due to obstruction at the radicles of the hepatic duct. He had noticed that in chronic jaundice, jaundice which had continued for years, the chief change, according to his observation, had related to connective tissue development shooting down from the surface into the centre of the lobules like a framework, and attended by corresponding changes in the liver-cells. He was, therefore, of the impression that in jaundice occurring in connection with interstitial hepatitis or some other diseases of the liver, the change leading to the jaundice began in the radicles and that the secondary changes were in the connective tissue.

Dr. Loomis could confirm all Dr. Porter had said with regard to diet being the most important factor in the treatment of these cases, yet it seemed to him that hardly sufficient stress had been placed on oxidation. He believed from clinical observation that all patients with jaundice did best when most in open air and sunlight. As to diet, he thought quantity as important as quality. He did not like plain milk, as a rule, but buttermilk or milk which had been made to undergo some fermentative change. Patients had not digested plain milk so well. With life in sunlight and open air at a moderately high altitude, say from fifteen to twenty-five hundred feet, and away from the sea, it was wonderful how rapidly some cases of jaundice would improve.

The Theory Insufficient.—Dr. Andrew H. Smith was unable to explain certain cases of jaundice which he could recall on the theory advanced in the paper, that it was entirely intra-lobular. In fact he could not recall a case of considerable intensity in which he was able to accurately limit the process intra lobular, or to differentiate between other forms of jaundice and that which was supposed to be strictly intra lobular. Perhaps he might in the future, since his attention has been specially directed to it. It was difficult to him to grasp the two ideas at the same time, that the bile was formed in the hepatic cells, and that jaundice was due to disorganization of those cells. We saw in yellow atrophy of the liver, for example, very rapid destruction of the liver-cells and substance, and yet a great degree of jaundice, as if bile production was very active at the very moment that it was destroyed. It seemed to him that in many instances the question was chiefly one of nervous influence, one which a chemical formula would hardly reach. A large amount of bile, say a pint and a half, was secreted by the liver every twenty-four hours, and while much of it passed out with the fæces, yet not a little entered the circulation. Notwithstanding this, the coloring matter of the bile did not appear in the urine under ordinary circumstances. There must be some process by which the bilirubin and biliverdin were rapidly destroyed. It seemed to him that there was as much opportunity for the production of jaundice, the appearance of bile at the surface, from some interference with the destruction of the bile after it had entered the circulation as by some change taking place in the hepatic structure. It was difficult to account for the sudden occurrence of jaundice under certain circumstances, as mental emotion, on the theory advanced in the paper. There was a very marked nervous impression, and this, perhaps, caused some disturbance of the vasomotor system of the liver, with less degree of tension in the blood-vessels of that organ than in the bile-ducts, under which circumstances there might be transferrence of bile from the ducts into the capillaries. This, however, was mere supposition, and was difficult of absolute demonstration. If the rules offered with regard to diet and medication were intended to apply only to cases of what we had been accustomed to consider catarrhal jaundice lasting some weeks, Dr. Smith had no criticisms to make, but he thought more latitude could be allowed in jaundice of less degree, and especially in so called biliousness.

Heptogenous versus Hæmatogenous Jaundice.—Dr. R. C. M. Page said jaundice was usually described as of two forms, heptogenous and hæmatogenous. The latter was claimed to be due to disintegration of blood-corpuscles and the transformation of their coloring matter into bile pigment. Now, bile is formed in the liver, and as it exists there in health there is no jaundice, but if from any cause it is retained in the liver it is absorbed by the lymphatics, passes along to the thoracic duct and general circulation and produces jaundice of most of the fluids and tissues of the body. This retention of bile is due to obstruction. The mode of obstruction in many cases is very readily understood—for instance, in catarrh of the bile-ducts, in the presence of gall-stones, of neoplasms. But the cause is not so apparent in some other conditions, as in suppurative pyelophlebitis, icterus neonatorum, acute yellow atrophy, phosphorus poisoning. But even in these cases there is probably obstruction to the escape of bile from extension of inflammation to the bile-ducts, or else the ducts become stuffed with desquamative epithelium, or both conditions may act, for the expulsive forces of the liver are so very feeble that it requires but a slight amount of resistance to produce retention. True jaundice depends upon coloring matter of the bile which has entered the circulation, and this entrance into the circulation is probably due in all cases to obstruction, although the obstruction may not be fully apparent in rare instances. If this be so, it is manifest there is no such thing as hæmatogenous jaundice.

Some closing remarks were made by Dr. Porter.

Women in the Scotch Universities —By a recent ordinance of the Scottish University Commission the universities are empowered to throw open to women such open bursaries, scholarships, and fellowships as they may see fit.

The Mecca Pilgrimage in 1893 was much larger than usual, aggregating over 250,000 souls. Of this number 25,000 died, most of them from cholera.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 10, 1894.

GEORGE C. FREEBORN, M.D., PRESIDENT.

Typhoid Fever with an Unusual History.—DR. GEORGE P. BIGGS presented specimens from a case of typhoid fever, which was chiefly interesting on account of the peculiar clinical history. The subject of the report was an Italian woman, aged nineteen, and married, with a negative family history. About two weeks previous to her admission to the hospital she had been taken with prostration, headache, pain in the back and abdomen, and was so ill as to be confined to bed. She felt feverish and constantly hungry. Four days before admission there was quite a profuse hemorrhage from the bowel, and two days later she aborted at the third month. A few days after entering the hospital the physician who had attended her previously called at the hospital, and said that one week before the abortion an attempt had been made to produce abortion, under the impression that the chill that she had had was a convulsion. It had been so reported to him by the friends. At the time of her admission her temperature was 104.6° F., the respirations were 28, and the pulse 128. Physical examination revealed nothing but a few râles over the lower lobes posteriorly. The heart sounds were normal, and the heart action, though rapid and feeble, was regular. The spleen did not appear to be enlarged. She was excessively anæmic. The urine had a specific gravity of 1,018, and contained five per cent. of albumin, but no casts. On the day following her admission there was a decided chill, and a subsequent rise of temperature to 106° F. An intra uterine douche was given, and a number of old blood-clots removed from the uterus. On the following day she was curetted, and a portion of tissue, supposed to be the remains of the placenta, also removed. The discharge from the uterus was moderate, and was without odor; but with the history, and with the chills and fever, it was thought probable that her symptoms were due to sepsis. On the third day of her stay in the hospital there was a hemorrhage from the bowel, similar to that which is observed in typhoid fever, and that night she had a severe chill. She was more than ever prostrated the next day. The urine had a specific gravity of 1,009, and contained two per cent. of albumin and granular casts. She died one week after admission, and just three weeks from the onset of the first symptoms.

The lesions at the autopsy were found to be those of a typical case of typhoid fever. The spleen was about three times its usual size. The intestinal glands were greatly enlarged. The typhoid ulcers were limited to the lower two feet of the ileum, and were particularly prominent in the last nine inches. There were also a few typhoid ulcers in the ascending colon, and these were quite superficial. The mucous membrane at this point was much congested, and there were small hemorrhages. Some of the ulcers in the small intestine were quite deep. The body of the uterus was cauterized with a hot iron, and a culture taken from the interior of the organ. The result was a pure culture of a bacillus which appeared to be identical with those obtained from the spleen. The uterus was about ten centimetres in length, and six centimetres in breadth at the middle. Its interior surface was covered with a whitish fibrinous material. The cavity was entirely empty. The peritoneum was normal, as were also the ovaries and Fallopian tubes, showing clearly that there had been no septic process originating in the uterus. A very marked atheromatous patch was noted in the aorta. The other organs showed well-marked parenchymatous changes, passing into fatty change. This was particularly noticeable in the heart and liver. In the latter organ there were also some peculiar yellowish areas, the exact nature of which had not yet been determined. They were located in the centre of the lobules, and from an examination of a frozen section they appeared to be composed of a few fat globules and of granular detritis.

General Tuberculosis.—Dr. Biggs then presented specimens from a case of general tuberculosis. The specimens were removed from a woman, forty-seven years of age, who had been admitted to the New York Hospital on May 16, 1894. For one year previous she had had constant pain in the left hip with a sense of numbness of the left thigh. For six months the severity of the pain had steadily increased. Examination under ether showed a mass about the size of a duck's egg in the left iliac fossa. It was quite tense and immovable. On admission the temperature was 98.4° F., the respirations, 24, and the pulse, 76. The urine was alkaline, had a specific gravity of 1,016, and contained a trace of albumin and a few leucocytes. Under ether a four-inch incision was made just above and parallel to Poupart's ligament on the left side. This led the way to an extra-peritoneal collection of fluid in the left iliac fossa. On incision six ounces of a dark-greenish fluid escaped. The cavity was washed out and packed with gauze. No connection between the cyst and the other parts could be detected. The fluid was not examined, The pain was relieved by the operation. On June 25th she menstruated. By the time the wound had nearly closed, July 5th, she was again complaining of much pain. The wound was re-opened, and with the finger in the rectum another mass was felt quite low down. A similar collection of fluid was evacuated, and the same treatment adopted. The first cyst had apparently disappeared by this time. The urine was then found to be free from albumin, but it contained hyaline casts. The pain was once more relieved by the operation. On July 30th another accumulation of fluid was evacuated. On August 4th it was noted that the left leg was quite markedly adducted and rotated inward, and that it was partially flexed, with a shortening of the limb on that side of one inch. The pain was now worse, and the discharge from the old sinus quite profuse. On August 11th this sinus was explored, and a distinct, harsh crepitation felt on moving the thigh. The finger could be passed into the hip joint. The head of the femur was found to be bare, and considerably eroded. The patient's temperature at that time was as high as 103° F. in the evening. On August 19th some œdema of the right leg and foot was noted. The œdema increased, and she finally died on October 9th.

The first specimen presented, the hip-joint, showed that the floor of the acetabulum had been entirely destroyed, and that the opening so made communicated with a large collection of pus. The lining of the acetabulum was extensively infiltrated with partially necrotic tubercular tissue. The head of the femur was also exhibited, and was shown to be deeply eroded. There was a large abscess extending up behind the peritoneum as far as the diaphragm on the left side, and as far as the spinal column on the right side. Another abscess extended down on the inner side of the pelvis between the layers of the broad ligament. Then there were abscesses burrowing down into the thighs. The pus was rather thin and mixed with blood. There was another collection of about two ounces of thick cheesy pus in the median line in the pre-vesical space. The mucous membrane of the bladder was considerably thickened and congested, and there were a few points of hemorrhage. Its whole surface presented a more or less granular appearance. In the trigone were two perfectly distinct tubercles. The uterus was of about the normal size, and contained three perfectly characteristic fibroids about the size of hickory nuts. The mucous membrane of the upper two-thirds of the body of the uterus was covered with a yellowish-white cheesy layer characteristic of tuberculosis of the endometrium. The posterior wall of the vagina contained one small nodule about three millimetres in diameter, and this, on incision, was found to contain some material apparently tubercular, although the presence of tubercle bacilli had not yet been demon-

strated. The tubes were larger and harder at a distance from the uterus, and were filled with cheesy matter. The ovaries were distinctly atrophied, and while the tubes were adherent to them there was no evidence of tubercular matter in the substance of the ovaries. There were no symptoms referable to the condition of the genital organs. There were typical tubercular deposits scattered through both lungs. The bronchial glands were deeply pigmented, but contained neither cheesy nor calcareous matter. The liver was extremely fatty. In spite of the rather prolonged suppuration, none of the organs gave a reaction with iodine. A nodule was found in one of the suprarenal capsules, which was probably tubercular in its nature. It was fibrous rather than cheesy, and was situated superficially in the suprarenal capsule. The intestines showed no tubercular lesions. The peritoneal cavity contained no fluid, and the pericardium and pleura were perfectly normal.

Marked Atheroma of the Aorta.—Dr. Biggs also presented a specimen of marked atheroma of the aorta. The specimen had only been removed late that afternoon by autopsy from a man dying with uræmic symptoms. The kidneys showed rather advanced chronic diffuse nephritis. No special lesions were found except in the aorta, which, in the lower portion, showed a large number of greatly softened areas, some of them measuring as much as 2 ctm. in diameter, and apparently on the point of rupture.

Dr. Biggs, in answer to a question from Dr. H. P. Loomis as to what he considered the primary lesion in the case of tuberculosis, replied that the lesions in the hip and genital organs appeared to be of longer standing than those in the lungs. Personally, he thought primary tuberculosis of the genital organs was not very rare.

Dr. R. H. Savre said that the lesions in the lungs and genital organs seemed to him much more recent than those in the hip, and certainly the clinical history seemed to point to primary disease in the hip.

Dr. Biggs asked what would then be the explanation of the tuberculosis in the hip.

Dr. R. H. Sayre said he did not think anyone had offered a satisfactory explanation of the common clinical fact of tuberculosis of the joints without apparently any prior tubercular lesions. There were various autopsies on record where, so far as the gross appearances went, there were no evidences of tubercular processes in the lungs, yet there were quite well marked tubercular processes in the organs. Virchow had reported several such autopsies. He saw no reason for assuming that tuberculosis must come through the lungs.

Dr. J. S. Ely thought there was another way of explaining a primary tubercular process in the internal organs where it occurred in relatively young persons, and that was by direct transmission of the tubercle bacilli from the mother to the fœtus. It had been demonstrated experimentally, and inferred from these experiments, that the lesions might lie dormant for four or five years. It was known that under certain circumstances, germs might remain quiescent in the body for a long time, and then become active. Fraenkel had reported a case several years ago, in which a deep abscess had developed a year after a typhoid fever, and in which the typhoid bacillus was found by cultivations. In Vienna not long ago a case of osteo myelitis had been reported where careful search revealed no fresh source of infection, but where thirty-five years after a previous osteo-myelitis there was a fresh outbreak in the same spot. On chiselling away the bone a layer of fresh pus was found containing the staphylococcus pyogenes aureus. It was surrounded by dense bone, which had probably encapsulated the bacteria thirty-five years before. Now, it was possible that the hip, in the case under discussion, had become infected many years before any real outbreak of tuberculosis had been manifested by physical signs. It seemed to him that the hip was the primary source, but he also believed that the point of entrance of the tubercle bacilli was the lungs. A strong argument to him was the much greater frequency with which the bacilli entered the lungs than elsewhere.

The President said that not long ago he had had sent to him for examination a portion of tubercular tissue taken from a female nurse's arm. During labor, her arm had been gripped very strongly by the patient, and some time afterward small nodules had developed subcutaneously at this spot. On examination, he had found the typical lesions of tuberculosis, as well as tubercle bacilli in the lesions. Three or four specimens were taken. More recently he had learned that there had been a diffuse tubercular inflammation of the cellular tissue of the arm. The patient appeared to be perfectly healthy. It was thought that the lymph nodes in the arm had contained some of these bacilli, and that the gripping of the arm, by rupturing these nodes, had set free these germs, and had enabled them to become active as a result of this traumatism.

Dr. H. P. Loomis recalled an autopsy made about three years ago on a prize-fighter. He had died of acute pneumonia. The autopsy showed the lungs normal, with the exception of the pneumonia, but there was a large bronchial gland which contained typical tubercle bacilli in large numbers, and also typical tubercular lesions, showing that these germs might be stored up in the body for a long time without manifesting themselves.

Dr. W. G. Hudson presented a microscopical specimen for an opinion as to its nature.

Dr. H. P. Loomis expressed the opinion that the specimen was undoubtedly one of tuberculosis.

Tumors from Dogs were presented by Dr. J. S. Ely. The first tumor was an ecchondro-osteo-sarcoma of the mamma of a bitch. The specimen was taken from a thoroughbred Irish spaniel belonging to Dr. Furman. Last March this animal had a litter of seven pups. One of them nursed persistently on the left nipple. Shortly afterward several lumps developed in this mamma, which were lanced by Dr. Furman, and pus evacuated. Three months before the tumor was removed it had become so large as to be troublesome.

The second tumor, of which a microscopical specimen was also presented, was a carcinoma of the skin, situated on the lower surface of the tail of a dog, about one inch from the root of the tail. These tumors, the speaker said, sometimes developed from the peri-anal glands, but in this case there was no connection with the trunk. The tumor was dense and lobulated.

The speaker said that Bland Sutton, in his introduction to general pathology, had treated at considerable length of tumors, yet he had not mentioned carcinoma as common in the dog. In a recently published article on tumors in some of the lower animals, 38 tumors were described as having been observed in dogs, viz., 16 were adenomata, 9 were carcinomata, 2 epitheliomata containing "pearls," and 11 were sarcomata.

Ovarian Tumor.—The President presented a portion of ovarian tumor showing electro punctures. The growth had been removed from a woman, forty-six years of age. The history of the growth extended over a considerable number of years. She had been under treatment in London for a long time, and while there one hundred and thirteen electro-punctures had been made during a period of a year and a half. The tumor, nevertheless, continued to grow. She entered the hospital service of Dr. Bache Emmet, and on April 10, 1894, he removed the tumor piecemeal. It was attached to the left horn of the uterus. The woman died of shock. The tumor was a large lobulated mass, the central portion of which was a rather large cyst. The greater part of the cyst was composed of fibrous tissue. There were evidences of smaller cysts in the wall. Microscopical examination showed the tumor to be a fibro-sarcoma. The spots, which from their gross appearance were at first supposed to be hæmorrhagic spots, were really areas of necrosis. Scattered through the tumor were calcareous masses. The clinical record was unfortunately very incomplete.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE MEETING OF THE COLLEGE OF SURGEONS—REFUSAL TO THANK THE COUNCIL—CHELSEA HOSPITAL AGAIN—COVENTRY DISPENSARY—CLINICAL SOCIETY—SUBDIAPHRAGMATIC ABSCESS COMMUNICATING WITH PLEURA—CHLORAL POISONING.

LONDON, November 3, 1894.

THE annual meeting of the Fellows and members of the Royal College of Surgeons was held on Thursday, and gave one more occasion for a protest on behalf of the members. This protest, however, will no doubt, as usual, be calmly disregarded by the Council. The President opened the proceedings with a few remarks on the Report for the year, which had been already circulated. Then Mr. Joseph Smith, who had given notice of the oft-passed resolution that members should have a voice in the election of the Council, rose and said that he regretted no hope of redress had been held out by the President. His motion had been passed by several successive annual meetings, but it had never been acted upon. This year the notice was pronounced not quite in order, but the President and Council had permitted it to be brought forward. Mr. Smith, however, declined to accept any grace in the matter, holding that the dignity of the members demanded the right to discuss their affairs in a manner consonant with the propriety of public meetings. He therefore withdrew his motion. Thereupon a resolution in somewhat modified terms was moved and seconded. After some discussion it was carried by twenty-five votes to eight. In the course of discussion the President said he was the son and grandson of a general practitioner, and that every Fellow was a member, though how that affected the claims of members who were not Fellows he did not explain. Mr. T. Smith declared it would be ungraceful for the Council to try to deprive Fellows of their privileges. In that objection is the gist of the matter. The Fellows claim the privilege of electing. Of this privilege they have deprived the members, and they refuse to restore a single vote to those who constitute the great majority.

A resolution was proposed thanking the Council for the Report and for their concessions as to separate meetings for Fellows and members. Objection was taken to this on the ground that whatever had been conceded was a right, not a favor, and the motion was rejected by nineteen to six. The numbers show what a falling off there has been in the attendance at these meetings. This is caused by the apathy of despair at obtaining what once seemed possible. The members are absorbed in their daily duties and can hardly spare time to take part in political movements. When, however, they next arouse themselves to appear in their thousands they may effectually assert their rights.

The Chelsea Hospital scandal seems interminable. Lord Cadogan has now resigned the presidency and it is reported that the next development will be the withdrawal of the royal personages who are patrons. Still the committee stick to their position and will not resign. It is suggested that the newly elected staff should resign. But what would be the result? Others would step into their shoes, just as on the last occasion.

An example of the want of unity and the readiness to supplant is also furnished at Coventry. The dispensary of that town has been figuring in a correspondence in which it is asserted that if the staff resigned their neighbors would take their places. I expect this is a fact, though the *British Medical Journal* affects to be shocked at such a suggestion, and pretends it would not accept advertisements of the vacancies. This is really too good when we remember what advertisements are accepted, and that on other occasions the *Journal* has actually more than withheld support from a hospital staff which was resigning. But I turn from these unwelcome disputes to more practical subjects.

At the last meeting of the Clinical Society Dr. Hector Mackenzie and Mr. F. C. Abbott related a case of subdiaphragmatic abscess communicating with the right pleura successfully treated by resection of ribs and drainage, in a boy aged ten. When admitted into the hospital there was an acutely rounded and reddened swelling centrally situated in the epigastrium. The right side of the chest gave the physical signs of a pyopneumothorax, and the epigastric swelling freely communicated with the right pleura, for it became much more prominent when the patient sat up or coughed, and then distinctly gave evidence of fluctuation. It was decided to drain the sub-diaphragmatic abscess and the empyema by a single opening in the pleura. On the second day after admission a portion of the sixth rib was resected just behind the mid-axillary line. Thirty ounces of exceedingly offensive thin watery pus containing some flakes were evacuated. On exploring with the finger the upper surface of the liver was felt through the opening in the fore part of the diaphragm. The whole cavity was well irrigated with warm boracic solution and a double drainage tube inserted. The cavity was washed out daily, but the discharge continued to be offensive for several days. The patient left the hospital on the forty-seventh day cured. The lung expanded well, and the only sign to be detected six months later was a slight relative dulness at the base of the affected side. The history of the illness pointed clearly to an abdominal origin. The presence of air as well as fluid, and the factor of the abscess pointed to perforation of an air containing viscus, most probably of a gastric or duodenal ulcer.

The President, Mr. Hulke, mentioned the case of a lad aged thirteen, for whom he made an opening in the tenth interspace, and, removing a piece of rib, gave exit to much foul pus. It could then be made out that there was an opening in the diaphragm leading down to an abdominal abscess. Drainage-tubes were inserted and the lad made an excellent recovery, the lung subsequently expanding fully.

Mr. F. C. Abbott said he had little doubt at the time that the abscess originated on the upper surface of the liver, thus shutting off the greater sac of the peritoneum. He pointed out that most cases like this occurred on the left side, and observed that a gastric ulcer which had perforated, would, after passing into the lesser sac, naturally affect the pleura on the same side. Perforating ulcers on the anterior surface of the stomach really penetrated the corresponding pleura. He thought the best plan was to attack such abscesses through the thoracic wall, because the lung invariably expanded well after. The danger in any event was certainly less than would result from an opening made in the middle line of the abdomen.

Dr. S. West questioned the propriety of getting at these abscesses through the chest, cutting into what might prove to be healthy pleura, and thus introducing foul septic pus into the pleural cavity, the more so as the abdomen could at present be opened with comparative impunity. He, however, recalled a case in which Mr. Pitts had cut down upon a hepatic abscess through the pleura with every success. Mr. Pearce Gould observed that many of these cases died before the abscess had extended from the region of the duodenum to the corresponding pleura. He saw one case a few days since, a young woman said to have a sarcoma of the liver. There was evidently a large abscess below the diaphragm, and he opened it in the middle line, immediately below the ensiform cartilage, giving exit to a large quantity of gas, to several pints of fluid, and to an enormous hydatid cyst springing from the upper surface of the liver. There was no opening in the diaphragm.

Dr. Lee Dickinson said that duodenal ulcers were very rare in boys of this age, and suggested perforation of the colon, referring to a case of right sub-phrenic abscess described by Dr. C. J. B. Williams, which proved to be due to a perforation of the hepatic flexure of the colon.

Mr. Bruce Clarke said that not long since he had opened a hydatid of the liver through the pleura without any untoward sequelæ.

A case of recovery from poisoning by one ounce of chloral hydrate was next communicated by Sir Dyce Duckworth for Dr. R. J. Colenso. A lady aged thirty-four, deliberately took, on December 12, 1893, one ounce of chloral hydrate in two ounces of water at 8 A.M. At 4 P.M. she was discovered in her bed unconscious. No ordinary rousing measures were of any avail. Medical aid was not procured till 5 30 P.M. The patient was then found to be comatose, with abolition of all reflexes, breathing shallow and stertorous, pupils both small and very sluggish, pulse 130, small and rather firm; temperature 100.5° F. The nature of the poison taken was not found till about three hours subsequently. Atropine was given hypodermically, and the stomach washed out, but the washings revealed nothing as to the poison taken. Strychnine, ether, amyl and other restoratives were employed, and recovery ultimately occurred. The satisfactory result was doubtless due to the robust health and fine physique of the patient, and in no small degree to the persistent and energetic efforts made by a staff of intelligent assistants, who labored for twelve hours to restore animation.

The president alluded to a case of a young woman who was proved subsequently to have taken 320 grains of chloral. The pupils were contracted almost to a pin's point. He washed out the stomach, but they had to resort to artificial respiration several times in order to keep her going. He pumped strong coffee into the stomach and ultimately she came round.

Dr. Churton-Leeds then read the notes of a case of multiple neuritis, fatal on the sixth day, in a rather fragile girl aged fourteen.

MR. BRYANT'S HUNTERIAN LECTURE.

REPORTED BY OUR LONDON CORRESPONDENT.

THE lecture at the Hunterian Society was this year delivered by Mr. Thomas Bryant, ex-president of the Royal College of Surgeons. The topic he chose for his address was "Some subjects of Public and Professional Interest." After some general remarks on the education of the profession, he enforced the necessity of keeping up the standard of preliminary studies, and declared that the Medical Council represented not only the licensing boards but the best views of the profession in the conviction that those young men who have enjoyed the broadest and deepest general education are the best fitted to undertake and master as they ought the many difficulties with which the student of medicine has to grapple. He hoped, therefore, that the time was not far off when for all university men an Arts degree, and for all others an examination of equal standard, will be required before they are allowed to enter the portals of the profession; although, with the view of giving a helping hand to the student who, after taking his arts degree, must now have five years for special medical study—it ought to be so arranged that in his arts curriculum the subjects of physics, chemistry, and biology should be included. Under this new régime the student would enter upon his purely medical work better equipped and with every prospect of success, and would with greater probability than now can be said to exist, have unconsciously acquired in his university training a cultured mind, and with it something of the true "professional spirit," so that he would not only practice in that spirit, but when the business side had to be faced—for there was such a side—and the question of emolument and worldly advantages must be considered—he would recognize and remember that he could only raise himself by raising the profession in the estimation of those who formed his circle, and that he could never do so either by lowering the position of his profession ever so little, or by allowing the "spirit of trade" to master the "professional spirit," and so becoming a "medical tradesman." Where, then, asked the lecturer, "is the room for the old system of apprenticeship, for the restoration of which we every now and then hear a feeble cry? The reply to this could be but one, "Too late, too late. Apprenticeship is as dead as Cæsar." This, he held, need not be a source of regret, for, reviewing the system all round, the master was the only one who, as a rule, derived any certain benefit from its adoption, for he pocketed the premium which went with the apprenticeship—often several hundreds of pounds—and at the same time found a dispenser or useful servant in the unfortunate man who was bound for five years to do whatever was required of him. With the present heavy demand upon the powers and time of the student, he hoped to hear no more of this system, as it is an impossibility and an anachronism. He thought it would be well if the teachers during the last year of study would take some opportunity of leading their pupils' thoughts in this direction, for it was clear that in business questions, business knowledge is essential, and good advice at this time must bring forth good fruit. This might be done by means of a post graduate lecture, this taking the place with advantage of the old "introductory," which had been nearly given up. He believed that the best step a student could take before entering upon a practice was to spend a year as an assistant to a good medical practitioner; by so doing he would learn the business part of his profession as well as acquire much more if the practitioner happened to be of a high class. Medical schools should keep a list of high class men in good practice who were willing to accept qualified students for this end, and both would no doubt profit by the plan.

The subject of professional remuneration, which was now claiming attention, he felt was a difficult one to handle, but it had been the cause of no little recent complaining and heartburning, and there was a great deal of reason for this feeling, since much professional work was notoriously ill paid, and private work was no less so. Not long since an active chairman of a provincial county council told him in conversation he was as chairman ashamed at the smallness of the salaries the poor-law medical officers received, and yet he was alive to the fact that if the present ones refused to continue for that amount there were others who would readily accept the place. He admitted the parish parsimony as regards payments, but with such competition before him, what was he to do. The same complaints might also be made as regards clubs, and more particularly of the so-called Medical Aid Associations. Indeed, rising higher in the scale, and with respect to honorary appointments, men who would wish to stand well with their confrères were at times too ready to accept positions which others had deemed it right to vacate. In such men the "spirit of trade" had mastered the "professional spirit" and was allowed to have its way. This conduct all round was bad and sad; but how was it to be prevented? Some men to put a stop to these practices and other evils called out, "Let the Medical Council or Royal Corporations correct them;" while others looked to defence associations, medical associations acting as courts of ethics, to pass judgments and enforce decisions.

He wished to point out that to look for a sound remedy we must look to ourselves, for "our remedies oft in ourselves do lie." To aid us in this direction by all means let medical defence unions, local societies and medical associations be formed, if we have not enough, and more particularly let these bring before the General Medical Council or Royal Colleges every grave act of professional misconduct of registered practitioners, and in so doing support their causes with evidences which must satisfy their judges; for the functions of these bodies were simply judicial. By so doing the evils of covering, of unqualified assistants, of giving false certificates, of undue or gross forms of advertising and touting for patients would speedily be abolished, and with these evils many others would die. He suggested a Board of Dis-

cipline to whom all medical grievances could by the local societies or associations be submitted, the duties of such a board being much the same as those of our own Royal Colleges of Medicine and Surgery. Such a strong appeal court would have the confidence of the profession and public and would help materially to suppress doubtful acts and check many evil ones before they became grave enough to be pronounced "infamous in a professional respect" and so render the culprit liable to be taken off the register. In practice we should never forget that the patients' interests are those which should be first thought of, and that the public good was its ultimate object; but in so doing let us remember that it was all important for the public interests, as well as for the due exercise and dignity of our profession, that every practitioner should hold an independent but responsible position and that in his professional work he should be left perfectly free from lay control, although amenable to lay censure. It was also equally needful that he should be adequately paid for his services by all classes according to their means. All measures, whether under the guise of charity or termed "provident," and all hospitals which encourage the public to seek professional advice for nothing or next to nothing, were to be discouraged as helping to panperize and degrade the public at large.

The same might be said of the members of the profession who tempted the public to do the same thing by means of private hospitals, touting clubs and associations, or who were ready to accept at a reduced figure, over their neighbors' heads, appointments which had been put up by laymen, as it were, to auction or competition. Medical men by such acts adopted the surest way within their power to lower the position of their profession in general estimation; and at the same time did injustice to themselves and the public by not giving to the latter the best services the profession can supply, while they must, in addition, lose their own self-respect even if they happen to gain cash by their own unworthy actions. For let it be asked, How is it possible for a man who is ill-paid or overworked, or both, to give the attention it is essential for him to bestow on every case he has undertaken to attend; or to maintain, in the interests of the profession, the position to which he is entitled and his own self-respect. Mr. Bryant then passed on to consider the following questions: the working of public provident dispensaries, the conditions under which private ones should be worked and sanctioned; the conditions under which clubs should be worked; the good or evil influences of medical aid associations worked for their own profit by laymen; the duties of unqualified assistants; and how midwives, or, what seemed a better term, "nurse midwives," are to be educated and utilized for the public good. The chief solution of these lay in the hands of the general practitioner; and he expressed his conviction that clearly formed opinions upon each of these, formulated after due discussion by such societies as this, would do more to mould the professional mind for good, and form a better basis for future corporate action than any opinions emanating from the General Medical Council or the two Royal Medical Corporations.

It was likewise an error to look to the General Medical Council or Royal Corporations to give, under existing circumstances, judicial opinions on these and other complicated questions. To ask these bodies to consider and solve ethical questions connected with professional work and professional advancement, and, having solved them, to seek powers to enforce their views, is too much to expect, even if it were desirable. The General Medical Council has done good work in putting down the serious public offence of "covering" and of giving false certificates, more especially of death, by unqualified practitioners. It did good also in expressing decided opinions on gross advertisements and other delinquencies. He assured his hearers that his own college—the Royal College of Surgeons of England—with its present limited disciplinary powers, had not been, and was not idle in the same direction, for there were few meetings held of the council before which some complaint of undue modes of advertising, and of the employment of secret remedies, with other illegitimate methods of carrying on the "medical trade," was not brought. If the offence charged was not serious enough to justify the name being taken off the books, a serious expression of the council's opinion upon the nature of the act complained of, and a decision that the misdemeanor was inconsistent with the declaration made by the delinquent when he was admitted a member "that he would demean himself honorably in the practice of his profession, and do his best to maintain the dignity and welfare of the college," were often enough to induce him to mend his ways and adopt more lawful means of carrying on his work. At any rate, these expressions of opinion did great good and tended to stop ways which lead downward; and he believed that if the attention of the council were more often drawn by the college members to methods which weak men adopted from their weakness and which strong ones know were injurious both to the profession and the public, the action of the council for good would be more frequently repeated, to the great advantage of the profession and the suppression of bad ways. A society could well do what individual men might shrink from. During the last seven years—besides all members of the college who had been convicted of criminal offences—six members have been removed from the list of members for issuing advertisements or practising secret methods of cure which the council regarded as "prejudicial to the interests" and "derogatory to the honor of the college," as well as "disgraceful to the profession of surgery;" and six other members who had offended against our by laws in the same way had simply been let off after they had made "declarations," that they would not so offend again; while one other member was removed for being associated with a disreputable museum. Thus thirteen members had been brought before the council in seven years for having seriously offended against the by-laws of the college, besides many others who had been satisfactorily dealt with by the President for minor offences. But, said the lecturer, "you must not rely on the Royal Corporations for the help which, to be effective, must come from yourselves."

Let such societies as this, and all others like it, exclude men who do such wrongs from their list of members if they persist in their bad ways after they have been warned, and let the excluded members know the reason why they are so excluded; and when the profession as a body has spoken, greater powers may be attained by the corporations; for seven years ago, when the Royal College of Surgeons applied to the Privy Council for some enlargement of its disciplinary powers, its requests were refused, not, however, on account of any objections which were raised by the Privy Council to the powers asked for, but on account of the opposition of certain Fellows and ill-informed members of our own body who had placed themselves in antagonistic positions. If this opposition had not occurred, the disciplinary powers of the college would have been enlarged.

With respect to "public provident dispensaries," such institutions might be made valuable both to the public and the profession. But in order to secure these desirable ends it was all-important that only such members should be admitted to the advantages of the dispensary as were of the wage-earning and poorer classes, and that the scale of admission charges should be calculated in single persons as upon a percentage of their wages, and in families upon the aggregate wages of the family or household and not on that of the member only in whose name the ticket was taken out. Their doors should be opened to registered members, but their rules should be such as to allow of any of the "well-to do poorer classes" being able to obtain speedy help and relief upon well-defined terms from any one of the doctors of the district in the event of any sudden illness or accident taking place. Every doctor of the district should, more-

over, be admitted a member of the staff, should he wish to, and be paid for the work he had done.

With parish dispensaries for the very poor, and provident dispensaries for the "well-to-do poor," the needy classes would be well looked after, and the medical officers of both would be fairly treated. With the existence of these public provident dispensaries, so called "private dispensaries" would not be needed, and consequently should not be allowed; since such dispensaries were too often the mere speculations of needy men who traded upon the poor for their own ends, and degraded the medical officer to the level of a small and unscrupulous tradesman. Again, town and country clubs were institutions to be encouraged, for the same reasons as public provident dispensaries; but it seemed that the scale of charges now required should be somewhat higher than that which has been asked in past years, for wages had been much raised, and the medical club charge should be a percentage on wages. As to what were called "medical aid associations" the lecturer was at a loss to know where, in most of them, good was done, for it was clearly degrading for any qualified man to do professional work as the paid servant of a committee of illiterate or even educated laymen, and consequently to work under their control.

It was likewise a clear wrong both to the public and profession, that members should be admitted to these associations who were not of the wage earning or allied classes, and who were well able to pay the limited charges of a private practitioner. The medical aid association was a growth of a diseased nature, and it ought to be either brought into line with public provident dispensaries or club practice, as sanctioned by and based upon the friendly societies act, or it ought to be rooted out of professional public work. As to the duties of unqualified assistants, all would agree that they should be reserved for home duties, not far beyond those of a dispensing assistant.

Finally Mr. Bryant said a few words about the burning question of midwives. He admitted that in some districts they are necessary. If necessary, it was evident that they should be efficient, for if they were not efficient they must be dangerous assistants and had better be away; and if they were to be efficient, the conclusion was that they must not only be made so, but that their knowledge should be tested by competent examiners before they were allowed to embark on their responsible and serious duties. He wished all "midwives," as they were called, to be regarded as "nurse midwives" and even to be named such—and he was pleased to add that this suggestion had been adopted by the General Medical Council, since the term carries with it the meaning that they were really nothing but skilled nurses educated for special work. He wished it to be undertaken under the direction of the two Royal Medical Colleges of England by means of examining boards, central or district, the curriculum of study as well as scope of examination entirely resting with the two royal colleges.

"MUST THE PARSON PAY?" AGAIN.

To the Editor of the Medical Record.

Sir: As I am asked a question or two or more by a gentleman (I wish he was more of a gentleman) of Pararis, Fla., it brings me forward to trouble you a little to answer. He asks, "Is it not a fact that laboring-men and clerks who receive a salary of $40 per month (some less), pay their medical bills without a murmur?" No, sir: some of them do, many of them murmur, and some do not pay at all. Again, "Is it not also a fact that the vast majority of physicians do a great amount of work for which they receive not a penny, in some instances even furnishing the medicine?" Yes, sir; but how does that tally with the first question, or do other people better off cheat the doctors? No man honors the medical profession more than the writer, nor have I said a word against them and do not propose to, as a class. My objection to C. H. Carroll's letter is his unwarranted inference that the minister merely recites his sermon on Sunday, as if he preached but one, when many of them deliver three, besides week evening work, funeral sermons at any call, and often receives no compensation. His sarcastic sneer of a minister's "repeating a prayer which he has learned by heart," is so utterly unworthy of any man, let alone a professional one, that it really places a stigma on his manhood (if he has any) that no gentleman would have placed there. Does the man imagine that a minister has no brains to think? Does he suppose that ministers have no heart for human suffering, no sympathy for the sick, no regard for God? that they merely repeat parrot-like words without a thought? expressions without a feeling? sentences without a care to comfort the sick, the sorrowing, and the mourner? Does he have the opinion that ministers mock God with lip service, without devotion, when they pray in the presence of human misfortune? Thank God, the medical profession, as such, are nobler-hearted than the few cavillers like this Florida agnostic. If he will read my article he will see that the average salary of the entire ministry is less than the $40 a month clerks. And no minister in the United States gets as high a salary as some medical men. I do not want the services of a man who so undervalues a minister's self sacrifices, and don't expect it. Medical services have been rendered me by men of large souls, not by being asked, but because they appreciated the poorly paid services, as a rule, of the large army of philanthropists in the Christian ministry.

Minister.

Berlin, N. H.

THE MARRIAGE OF SYPHILITICS.

To the Editor of the Medical Record.

Sir: In a letter appearing in your issue of November 10th, entitled "The Marriage of Syphilitics," Dr. Frank E. Maine, of Auburn, N. Y., answers a series of questions propounded by Dr. Burnside Foster, which, if acceptable to the latter, will render any further research on his part quite unnecessary. Unfortunately, Dr. Maine has taken a very positive stand in this matter, and one that is wholly unwarranted by either authorities or facts. The opinion expressed in this letter is opposed utterly to that held by all prominent authorities in the study of syphilis, both at home and abroad, and differs wholly from the teachings of men like Bumstead, Taylor, F. N. Otis, Keyes, Sturgis, and others, who have devoted a large part of their lives to the careful and painstaking study of this disease in the rich fields for research only obtainable in great cities.

While Dr. Maine may have had sufficient practical experience in the study of syphilis, in its relations to marriage, to feel justified in presenting his opinion in opposition to the gentlemen above cited, I must certainly object to his classifying scrofula among the syphilitic sequelæ, and would respectfully refer him to any of the more modern works on general pathology under the heading tuberculosis. As a matter of fact, some of the most healthy persons of my acquaintance have been born of parents, one of whom, at least, had been a sufferer from syphilis before marriage; nor have I observed the slightest trace of the disease in any form passed down to the third generation. In conclusion, Mr. Editor, allow me to refer to the words of Jonathan Hutchinson, F.R.S., the greatest English syphilographer of to-day, who says in regard to the advisability of telling syphilitics that marriage is for them ever to be avoided: "Such a course, or anything near it, would prevent thousands of happy marriages; would swell the ranks of those who adopt concubinage instead of wedlock, and while it would reduce the sum of human happiness, would probably not in the least diminish the prevalence of syphilis."

Very sincerely yours, W. K. Otis, M.D.

5 West Fiftieth Street, New York City.

NUCLEUS OF RED BLOOD-CORPUSCLE OF MAMMALS.

To the Editor of the Medical Record.

Sir: I read Dr. William Moser's remarks, in the Medical Record of October 20th last, relating to the caryocinetic changes in the red corpuscle, with much interest, as I there recognized various appearances of blood which I discovered during examination under the microscope about seven years ago, which interested me greatly at the time.

Up to this date it appears to be a recognized fact, taught in all text-books, that a nucleus did not exist in the red corpuscle of mammals, except in the embyro, and as a consequence, in certain anæmic conditions of the blood. I was always unwilling to accept that conclusion, on account of the admitted importance of all nuclei to cell life, and thus, as the blood corpuscles of birds and reptiles always contained a nucleus at all stages of their existence, it seemed highly probable that they really existed in the red corpuscles of the mammalia, and, reasoning by analogy, it seemed difficult to account for their absence, especially as they had been seen in human blood in the fœtal stage and under certain pathological conditions.

As I considered that the nucleus was composed of protoplasm, it struck me that the stain used by botanists as a reagent for this material in plants would be the best to employ to demonstrate the nucleus of the red corpuscle of animals, if it contained protoplasm.

Acting on this suggestion, I made a large number of human blood preparations in the following manner. Placing a drop of human blood on a slide, 3 × 1 inches, I then took another slide and drew the sharp edge rapidly across it at right angles, using all the pressure possible, and allowing it to dry. This is the best method of obtaining a single layer of blood with the corpuscles evenly distributed. When quite dry I pour over the preparation a strong solution of iodine, and remove after about a minute. It will dry rapidly, and will then be ready for microscopical examination.

I may here state that preparations of blood treated in this manner will remain in good form for an almost indefinite length of time, needing no glass cover or any preservative, and can be examined dry.

This examination of preparations of blood, dry, and without the addition of a glass cover, I consider an important feature of my work, and accounts for my seeing so much which had escaped previous observation, because I noticed that the addition of Canada balsam and other preservatives and a cover, caused most of the special features to disappear.

I was surprised to find on making a microscopical examination of human blood thus prepared, that all the red corpuscles in the field showed in each instance a clearly defined nucleus, some in the centre of the cell, and at the edge in others; in many instances two nuclei were visible in the one cell, and in rare instances they were in a cluster of five or six. In some instances were exhibited what a German authority calls homogeneous cells, having merely a very fine line as an outer ring, and in some cases such cells contained a nucleus.

At the time I made a very fine photograph of this slide showing all these appearances above described in the most clear and definite manner, but I failed to find any specialist who would take the slightest interest in the subject. I was aware that Dr. Osler, late of Canada, and then holding a professorship at the Johns Hopkins University, had given much attention to the microscopical appearance of blood, and I forwarded to him copies of my original photograph and enlarged copies of the same; but he came to the conclusion that because they had failed in their laboratory to find a nucleus in the red corpuscle by any of their methods of staining, that a nucleus did not exist, although he admitted that I had stained and photographed such an object which was optically perfect. I have still the original plate of my photograph, and have shown copies to hundreds of physicians.

However, feeling discouraged at the want of sympathy with my work, I simply let the matter drop, and was glad to find by Dr. Moser's paper that the subject is now claiming attention and has a prospect of being followed up, as I consider it will be an important factor in solving many of the most difficult medical problems of the present day, when systematic and intelligent microscopical examination of the blood is carried on.

John Michels.

315 West Fourteenth Street, New York.

THE DISPENSARY QUESTION IN CLEVELAND.

To the Editor of the Medical Record.

Sir: I have noticed that your medical journal has from time to time denounced the "dispensary abuse," but on the other hand I have noticed the apparent apathy of the profession in regard to this question. I would call your attention to the fact that here in Cleveland we have got the profession at large agitated over the question of the dispensary abuse, partly brought about by a trial going on between two homœopathic physicians in regard to this subject, the judges in the case being two trustees of their college.

In my own case the trial was before a jury in a Justice court. I sued the defendant for services rendered. The defendant came to the college dispensary looking for the surgeon who treated cripples. On being questioned he claimed a willingness to pay. He stated that he had a correspondence with Columbus, O., parties who would correct the club-feet of his boy for $500. He said that $500 was too much, but that he could pay a reasonable fee. I agreed to do it for a reasonable fee—less than $500. For personal convenience I very commonly have private patients from in and out of town go to the college building when a plaster-of-Paris dressing is required, but it is not applied in the presence of the class. This is done at the college instead of my office on account of having plenty of help at the college and also that it saves my office from being plastered up.

In this case I applied plaster to the child's feet several times at the college building. The operation was performed at University Hospital. The treatment was continued at the defendant's home and my office, lasting, in all, about four months.

The defendant reassured me over and over that he would pay, and acknowledged indebtedness in the presence of others. Finally when I tried to collect my fee he denied indebtedness, claiming that I treated his child as a clinical case betore the class. My answer to this is that there was no session of the college, and therefore there was no class. I sued for $262.50. The defendant had paid on account, $5. The jury granted $143, with interest for three years.

In discussing the "dispensary abuse" there is no chance for argument in regard to the deserving poor—they are never turned away from dispensaries to my knowledge. The question is: "Is it right for a dispensary to treat the well-to do?" My argument on the subject is as follows:

I hold that the services of dispensaries are maintained solely for the poor. That in return for the services rendered the poor patient may be used for clinical teaching. That the wealthy make donations to the institution on the representation that the money is to be used in this way. That to obtain donations in the aforesaid manner, and then to use the funds so obtained partly for the benefit of the well-to do, is usually called "obtaining money under false pretences," and is punishable by fine and imprisonment.

But we all know that this abuse exists; and what is the cause? As I see it, the incentive is the inherent selfishness of man; it is largely brought about (especially in the great cities of the East) by the men at the top—

those in authority. The Professor says to himself, "The larger the clinic, and the more assistants I have, the more important is my position. Secondly, these middle-class patients do not come from my following—I lose no practice by it." It was from the same motive that one of the Vanderbilts was led to say: "The rights of the public be d—d." In this case it would read "The rights of the profession be d—d."

The dispensary has no rights in the handling of patients further than the treatment and clinical use of the poor. It has no moral right to enter into competition with the outside practitioner.

But what about the rights of the dispensary physician? He is in active outside practice and has educated himself for that purpose. He is in open competition with all other practitioners and has a moral right to increase his practice by any honorable means, *i.e.*, in this case to take what additional practice the dispensary may accidentally or incidentally bring him. What right has a dispensary to say that we as a dispensary acknowledge that we have no right to this well-to-do patient, but we shall not permit you (the dispensary physician) to treat him? What right has a dispensary to discriminate against their dispensary physicians? Certainly the dispensary would admit the right of some other doctor (who might be physician to some other dispensary) to have the patient as a private case.

I am willing to abide by any reasonable rule of a dispensary as to the treatment of the poor, but will brook no dictation from any such organization as to whom I shall treat among the well-to-do.

Dr. Bishop, the defendant in the trial between the two homœpathic physicians, sent out a card to the physicians of the city asking the opinion of the profession in regard to the dispensary abuse. He claims to have over one hundred answers in which they all denounce the abuse, and agree that dispensaries are solely for the poor, with the privilege of using the patient for teaching purposes.

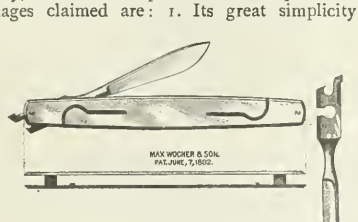
William E. Wirt, M.D.

Cleveland, O.

New Instruments.

AN ASEPTIBLE BISTOURY.

The general desire of physicians to obtain an aseptible bistoury, that resembles in its main features the old shell-handle double bistoury, with slide catch, has been complied with by introducing a new bistoury, of which the above is an illustration. It is the same form and size as the old slide bistoury, its blades open and close just as readily, and have the improvement that they lock automatically, both in the open and closed position. The advantages claimed are: 1. Its great simplicity. (It



consisting only of a plain skeleton steel handle and two blades.) 2. Its blades are locked automatically, both in the open and closed position, and their edges are protected in the handle when closed. 3. Its blades can be removed for sterilization in a simple manner, by holding them at a right angle with the handle. 4. The construction of the handle admits larger blades than any other bistoury, which is in many cases of great importance to the operator.

The accompanying cut shows the form and construction of the instrument. The small spring is pressed outward by the thumb nail, while the middle finger acts as a counter pressure against the side of the handle, at the same time the blade is opened by the fore-finger. The same position is assumed in closing the knife. In this case the fore finger presses against the back of the blade. In readjusting the blade, hold the same at a right angle to the handle, so that the corresponding numbers on the blade and handle are in view.

The instrument is manufactured by Max Wocher & Son, surgical instrument makers, Cincinnati, O.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 17, 1894.

	Cases.	Deaths.
Tuberculosis	86	106
Typhoid fever	28	10
Scarlet fever	72	3
Cerebro-spinal meningitis	1	1
Measles	52	2
Diphtheria	166	27
Small-pox	45	2

Yellow Fever and Mosquitoes.—Dr. Carlos Finlay, of Havana, believes that yellow fever is propagated chiefly, if not entirely, by inoculation, the principal agent of which is the mosquito. In a paper in the *Edinburgh Medical Journal* for October, 1894, he presents the following parallel, showing how closely the vital conditions of the mosquito agree with those which are known to favor or hinder the spread of yellow fever.

Yellow Fever.—Temperatures at which yellow fever has been observed to cease in New Orleans and in Rio Janeiro = 15° to 18° C.

Temperatures which have proved insufficient to prevent a subsequent reappearance of the disease without a new importation = 0° C.

Temperatures which are considered to completely extinguish the infection of yellow fever = severe frosts.

Mean temperatures which admit of a free propagation of yellow fever in Havana = 26° to 30° C.

Coincidence of unprecedented abundance of mosquitoes with severe yellow fever epidemics, in Philadelphia, 1797, and in the Southern States of North America, 1853.—(*Laroche*, ii.)

Artificial heat which has proved efficacious in definitely arresting the transmissibility of yellow fever—several stoves employed to heat the hold of the Regalia.—(*Laroche*, ii., p. 440.)

Altitudes at which epidemics of yellow fever have been exceptionally observed: Newcastle (Jamaica), 4,200 feet; and Madrid (1870), 2,000 feet.

Culex Mosquito.—Temperatures at which the mosquito is completely benumbed by artificial cooling of the air = 15° to 19° C.

Lowest temperature which the mosquito will bear, in a state of apparent death, and after which it may yet revive = 0° C.

Artificial cold after which the mosquito cannot revive = from 1° to 4° C. below zero.

Mean temperatures in which mosquitoes are most numerous in Havana = 25° to 30° C.

Coincidence of a scarcity of mosquitoes in Havana with an unusual diminution of yellow fever during the

summer of 1886, the reverse coincidence being observed during the autumn of the same year.

Temperatures at which the mosquito falls into a condition of apparent death, but may still revive = 39° to 41° C. Temperatures after which it cannot revive = 41° to 49° C.

Artificial rarefaction of air in which the mosquito is for a while deprived of its power of flying or stinging, but sometimes after a while recovers = equivalent to 1,000 –6,000 feet.

Influence of Bicycle Riding on the Uric Acid Diathesis.—Dr. Robin read a paper before the Academy of Medicine of Paris on this subject, in which he stated that moderate bicycling diminished markedly the secretion of uric acid, and emphasized that this exercise does not result in lack of elimination of the uric acid, but really diminishes its production.

He finds, on the other hand, that in sclerosis of the kidneys, in which a small amount of albumin is the most constant symptom, indulgence in this form of exercise is apt to markedly increase the amount of albumin, and is therefore contra-indicated.

Thyroid Feeding in Basedow's Disease.—Treating Basedow's disease by the administration of thyroids is in opposition to much that has recently been written concerning the pathogenesis of this disease, but this is what Dr. Voisin (Medical Society of the Hospitals, Paris) has recently reported. A young woman affected with exophthalmic goître was given the thyroid gland of the sheep to the amount of two drachms daily. At the end of two weeks the tachycardia had reduced one third, the goître had considerably diminished, as had the exophthalmus. When the case was reported the only symptoms of the disease were slight swelling of the neck and slight exophthalmus. Drs. Dreyfus, Brisac, and Beclere expressed their opinion that thyroid feeding tends to aggravate the disease and increase its symptoms rather than cure it.

Hereditary Syphilis in the New-born Associated with Acute Nephritis.—Dr. Hock showed at a meeting of the Medical Club (Vienna) an infant, the second child of a syphilitic mother, who eight weeks after its birth showed a syphilitic erythema which disappeared under the influence of proto-iodide of mercury. Later the extremities and penis began to swell, and an examination of the urine showed albumin, hyaline casts, and white and red corpuscles. Other symptoms of syphilis disappeared under the use of iodide of potash.

Hysterectomy for Uretero-uterine Fistula.—Dr. Mackenrodt presented at a meeting of the Medical Society (Berlin), a woman on whom he had successfully performed a hysterectomy for the cure of a uretero-uterine fistula. An attempt was made to cure the fistula, a result of a forceps delivery, by converting it into a uretero vaginal fistula, but failing in this the operator proceeded to extirpate the entire uterus. The ureter was first separated from the uterus and then the latter removed, care having been taken to close the peritoneal cavity, and also to arrange an opening for the ureters into the vagina. Three weeks afterward an oblique opening was made in the bladder, and the utero-vaginal fistula was attached to its walls. The vaginal wound closed, and the patient made a good recovery.

Tannigen, a New Intestinal Astringent.—Tannigen, according to Professors Meyer and F. Müller, in the *Deutsche Med. Wochenschrift*, is a derivative of tannin, and is a golden-gray odorless and tasteless powder. In dilute acids and in water it is not noticed, and is readily soluble in alcohol. As it produced no ill effect when given to animals, Professor Meyer requested Professor Müller to try it clinically, and the latter gentleman has for the last eighteen months been testing it with a view to its employment as a remedial agent. The dose given was from 0.2 to 0.5 grm. three times a day, and being tasteless it was readily taken. It was given, however, in as large a quantity as would lie on the end of a knife without producing any ill effect. It was first of all given in chronic diarrhœa of different kinds, in dysentery, and in the diarrhœa of phthisis. In far the larger number of cases it reduced the number of stools and improved their consistency. This result was not, however, a constant one, especially in the diarrhœa of phthisis, and when the remedy was stopped even in the other cases the diarrhœa returned. Some patients took the drug for weeks and experienced no diminution of its efficacy. In acute diarrhœas it acted, but not constantly, and in the diarrhœa of infants it produced no effect. The proper field, therefore, for tannigen is the chronic diarrhœas, and it possesses the great advantages over tannin that it is tasteless and does not disturb the gastric functions; it does not tan the stomach, but only the intestines. Professor Müller thinks there is a decided want of such a remedy, especially in the diarrhœa of phthisis and in chronic intestinal catarrh, a remedy which can be used for long periods with good effect, which does not take away the appetite, and which can be conveniently taken and is not disagreeable.

The Parasitic Theory of Eczema.—Dr. Malcolm Morris asks and answers these four questions regarding eczema:

Are internal remedies required in eczema?

The gist of his reply is embodied in these words: "My own view, stated broadly, is that as a general rule the less internal medication there is in eczema the better. If a constitutional dyscrasia underlie the skin affection it must of course be treated on the ordinary principles of medicine."

And so if neuroses, gastro-intestinal complications, or special or general debilities occur, they require due attention. But without definite indications internal medication should be withheld.

The influence of diet in eczema.

The writer here says: "I may frankly state that my own view is that diet has no influence at all except indirectly." Qualifications are entered, of course, in the case of gout and diabetes complicating eczema, and a lowered diet is advised "if the lesions are of an acutely inflammatory type."

What are the principles on which the local treatment of eczema should be carried out?

"Speaking generally, I treat every case as if it were of parasitic origin. Even if micro organisms are not the exciting agents in the causation of the process in all cases, parasitic irritation always comes into play sooner or later as a secondary factor, and requires to be appropriately dealt with. The objects which I aim at in the local treatment of eczema are, first, to destroy micro-organisms; secondly, to protect the inflamed surface from the air and from further microbic invasion; thirdly, to sooth irritation."

How is the tendency to recurrence of eczema in those predisposed to the disease to be overcome?

"Change of climate is often productive of good in this direction, especially if accompanied by complete rest of mind as well as body."

Then, touching the efficacy of baths and medicated waters, about which so much has been said, and which is a matter of strong popular opinion, the following summary appears:

1. No spring known to me has any specific action on eczema.

2. Sulphur waters have no special effect other than that due to their anti-parasitic action.

The Rev. Cotton Mather, of Salem witchcraft epidemic fame, was much interested in medical topics. He introduced the practice of inoculation into New England at the risk of his life, and published a popular work on medicine which, as Dr. Oliver Wendell Holmes points out ("Medical Essays"), proves him to have been what to-day would be called a bacteriologist. One of his capsulas (chapters) is devoted to the animalcular

origin of diseases; at the end of which he says, speaking of remedies for this supposed source of our distempers: "Mercury we know thee: But we are afraid thou wilt kill us too, if we employ thee to kill them that kill us. And yet for the cleansing of the small blood-vessels and making way for the free circulation of the blood and lymph—there is nothing like mercurial deobstruents."

The Water-supply of Jerusalem.—The Turkish Ministry of Public Works has determined upon the reconstruction of the ancient water conduits of Jerusalem, dating from the age of King Solomon. By this means it would be possible to convey twenty-five hundred cubic metres of water daily to the Holy City. Of this it is proposed to give one thousand metres away free of charge to the poor of Jerusalem, the distribution to take place at the Mosque of Omar, the Holy Sepulchre, and other places frequented by pilgrims. The new conduits are to be joined to the ancient aqueducts of Arob, and are to be carried through a tunnel 3,570 metres in length. The total outlay in connection with these works is estimated at 2,000,000 francs.

A Historical Case of Diphtheria.—The influence which epidemic disease has had upon the course of history is a curious subject for speculation, but most of the instances which have been adduced by various writers who have occasionally touched upon the subject, have been instances of wide-spread epidemics, such as the plague at Athens and the "Black Death" in England; but the effect which certain infectious diseases, more or less constantly present in temperate climates, may have had upon historical events is less clearly perceived. A curious instance is afforded by the death of Napoleon Charles, Prince Royal of Holland, the son of Louis, brother of Napoleon Bonaparte, and of Hortense, his stepdaughter. This child died, when not quite five years old, of a disease, which, there can be little doubt, was diphtheria. The boy was a favorite of his Imperial uncle, and was generally taken to St. Cloud when Napoleon stayed there in the summer. Though Napoleon never seems to have expressed himself clearly upon the subject, it was thought by many that he proposed to make this child, who was his nearest male relative in the second generation, his heir. Among those who shared this opinion was Meneval, who, as private secretary to Napoleon, had special opportunities of forming an opinion as to the Emperor's intentions. If this child had lived Napoleon, Meneval thinks, would not have divorced Josephine, would not, therefore, have exposed himself to be insulted by the Emperor of Russia's refusal of the hand of a grand duchess, and in all probability would not have gone to Moscow, and might therefore very possibly have founded a lasting dynasty. It is curious to remember that this boy's brother—his uterine brother at least—did actually sit on the throne of France. Napoleon, who was very much moved by the death of his nephew, offered a prize of 12,000 francs to the author of the best work on the means of preventing and curing croup. The boy died on May 5, 1807, and Meneval remarks that the superstitious looked upon it as a curious coincidence that Napoleon himself died on the same day of the same month fourteen years later.—*British Medical Journal.*

The First Recorded Death in Hypnosis.—The death of Ella Salamon, in Tuzer, Upper Hungary, at her home, on September 17, 1894, while in an hypnotic state, has attracted much attention abroad, owing to the fact that it is the first recorded instance of death of this kind.—*Medical Association.*

The Church Sanitary Association is the name of a society recently founded in England. Its membership is made up of the clergy and laity of the Established Church who believe that personal cleanliness and the observance of hygienic laws are Christian duties. It proposes to organize a propaganda by the establishment of lecture courses and the wide circulation of tracts on the preservation of health. It has been suggested that the work of reform should begin with the church buildings, which are so often poorly ventilated, draughty, and dark, and where people are often compelled to sit, with perhaps wet feet and damp garments, through a long service in a chilly cavern, whose stone floor is covered with pools from dripping umbrellas.

A Bust of the Late Dr. Leidy is to be placed in the library of the University of Pennsylvania.

A Cancer Ward in a Vienna Hospital.—Baron Albert de Rothschild has just given $250,000 to build and equip a pavilion in the Empress Elizabeth Hospital at Vienna for women suffering from cancer. The money constitutes a "Bettina" fund, called after the baron's late wife, who died from this disease.

Professor Koch on Cholera.—At the recent meeting of the German Public Health Society at Magdeburg, Dr. Koch said that it is now possible to prevent the spread of cholera in any country, and he was certain that Germany would never be visited again with an epidemic if only the measures now adopted were carried out early and energetically. It was a matter of indifference to him what precautionary measures were taken in other countries, for Germany was now able to protect herself and keep the cholera out of her own borders.

Lepers in Iceland.—A physician was sent by the Danish Government last summer to make a special inspection tour of southern Iceland to ascertain the number of lepers. The number found was fifty-three, or twice as many as expected. A hospital is to be built to prevent further spread of the disease.

Opium-Eaters and the Plague.—The opium dealers of Hong-Kong have collected data and issued a special pamphlet, in which they triumphantly point to the fact that opium eaters or smokers were, almost without exception, exempt from attack during the recent epidemic of the plague.

The Song of the General Practitioner.

Sung at the Annual Dinner of the Bolton and District Medical Society, October 4, 1894.

He must not walk his rounds for fear his patients think him poor,
And dearly do they love to see a carriage at their door;
And if his horse is fat—"He must have little work to do,"
And if it's lean the reason is: "He starves the poor old screw."

Should he call upon his patients every day when they are ill,
His motive plainly is "to make a great big doctor's bill;"
If he visits them less frequently—thus less'ning their expense—
The chances are he'll be accused of wilful negligence.

He must work all day and half the night, and never say he's tired;
For the public look upon him simply as a servant hired;
And should he take a holiday he'll find when he comes back
Some patients have resented it by giving him "the sack."

Concerning money he must seem indifferent to be,
And folks will think he practises from pure philanthropy,
When we hear about him boasting of the guineas that he earns
We wonder if they all appear in his income-tax returns.

About his own afflictions he must never say a word;
The notion of a doctor being ill is so absurd!
And when, perhaps from overwork, he's laid upon the shelf
His sympathizing patients say: "Physician, heal thyself!"

J. Johnston, M.D., in *Lancet.*

Cigarette-makers' Cramps has attacked the operatives in the French state tobacco factories. It is very common in Spain, but has not hitherto been noticed to any extent in France. The cramp affects the muscles of the thumb and first finger of each hand.

Drunkenness in St. Petersburg is reported to be greatly on the increase, so much so that the authorities have become alarmed, and have instituted the most energetic measures to suppress it. Any one found drunk in the street is imprisoned for from one to three days, and the person from whom the last drink was bought, if he can be found, is fined from five to twenty-five rubles.

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Original Articles.

HISTORY OF AN EPIDEMIC OF ACUTE NERVOUS DISEASE OF UNUSUAL TYPE.[1]

BY C. S. CAVERLY, M.D.,

RUTLAND, VT.

PRESIDENT STATE BOARD OF HEALTH.

DURING the month of June, 1894, there appeared in a portion of the valley of the Otter Creek, in the State of Vermont, an epidemic of nervous disease, in which the distinctive and most common symptom was paralysis. The great majority of the sufferers were children under six years of age. The city of Rutland and town of Wallingford were first affected, later the towns immediately contiguous to these, and to this tier of towns, thirteen in number, the outbreak was almost exclusively confined.

A remarkable series of cases occurring in the city of Rutland first attracted the attention of the physicians, and later, popular interest. Many of these cases were taken sick without apparent cause. In others it was ascribed to getting over-heated, or chilled suddenly when heated, indigestion, and occasionally to trauma. After a few weeks deaths were heard of, and during the latter part of July everyone was discussing the "new disease."

From my own observation, and conversation with other physicians, it was plain to me that an epidemic of unusual, if not of unique, type was prevailing, and I decided that my connection with the State Board of Health imposed a duty on me in connection therewith. The investigation thus undertaken in an official capacity soon showed me that the information I was acquiring, while unusual and valuable from a public-health standpoint, was doubly so from that of the practitioner. I am sure, therefore, that the physicians who have so kindly given me, as a member of the State Board of Health, the bulk of the data on which this paper is founded, will pardon the use to which I propose to put this material.

This epidemic has been confined, with very few exceptions, to the narrowest part of the Otter Creek Valley. The territory is bounded on the east by the Green Mountain range, and on the west by the Taconic range of mountains. North and south it has no natural boundaries. Its area is about fifteen miles wide, including the sides of the bounding mountains, and thirty miles long. Through this valley, from south to north, flows the sluggish stream of Otter Creek, dammed at several points. The extreme heat and drouth of the early summer had rendered the stream unusually low. The only reliable figures obtainable as to temperature, humidity, and rainfall for Vermont, are furnished me by the United States Weather Bureau Observer at Northfield, Vt. Since the opening of the station at that place, in 1887, the average temperature, humidity, and rainfall per month, for the months April, May, June, July, and August, the months in which these conditions could have any influence on an epidemic occurring during the summer months, was as follows:

	Temperature.	Humidity.	Rainfall.		Temperature.	Humidity.	Rainfall.
1887	57.7° F.	76 7	3.75	1891	56.2° F.	75.8	2.98
1888	55.3° F.	72.5	3.45	1892	56.9° F.	74.8	3.76
1889	57.6° F.	74.1	3.05	1893	56.5° F.	75.6	3.51
1890	55.3° F.	87.8	3.79	1894	56.1° F.	77.3	2.25

[1] Read before the Vermont State Medical Society at its annual meeting, October, 1894.

It will be noticed by these figures that the only marked deviation from the recorded meteorological conditions of the past eight years, which has occurred during the past summer, has been in the average monthly rainfall. This has been thirty per cent. less during the past spring and summer months than the average for the past eight years during these months. While it was a matter of frequent remark that our early summer was this year unusually hot, the official figures do not bear out this statement.

The population of the towns affected in this valley aggregates twenty six thousand, of which eighteen thousand dwell in the quarrying and manufacturing centres of Rutland, West Rutland, and Proctor. The usual sprinkling of foreign elements prevails in these centres, while in the outlying farming towns the population is chiefly of the regular New England type.

The first cases in this epidemic of which I find notes, occurred in the city of Rutland and town of Wallingford, simultaneously, about June 17th. The characteristics of the disease can be illustrated by a few cases, among the one hundred and twenty-six cases of which I now have notes.

CASE I.—Boy, three years of age, American. Previous health good; active child; healthier than his brother two years older. No apparent cause. Moderate fever; coated tongue; loss of appetite; sluggish bowels. As these symptoms improved it was observed that he could not walk or even stand alone. The weakness was most noticeable in the extensors of the thigh. After ten days he began to improve, and in three weeks was quite well.

This case is an illustration of the mildest type of these cases.

CASE II.—Boy, three and a half years of age, Irish; sturdy child; apparent cause playing too hard. Fever, 102° to 103° F. Incontinence of urine for ten days; hyperæsthesia. Fever abated on third day. Then was noticed paralysis of both legs; loss of patella reflex; no anæsthesia; slight response in lower extremities to faradism. Left leg improved rapidly, right slowly. After six weeks was able to stand and take a few steps by taking hold of chairs. After three months paralysis confined to right glutei and lower spinal muscles, with considerable wasting. The weakness of spinal muscles has resulted in a spinal curvature.

CASE XCIII.—Boy, two years of age, American. Had an attack of indigestion, from which he recovered, when he was taken on a long carriage drive. Immediately developed high fever, with an erythematous rash and considerable muscular rigidity. After a few days there was paralysis of both legs and loss of patella reflexes. After a month has not improved.

CASE XCIV.—Boy, six years of age; healthy child; apparent cause chilling the body; fever, 104° F.; vomiting. Acute symptoms lasted six days. On the sixth day paralysis of right arm, followed on the seventh day with paralysis of left leg. After three months extensors of left thigh and right deltoid wasted and weak.

These three cases illustrate a very common phase of the disease. Some of the cases fully recovered, and many still suffer from probably permanent impairment of some muscles.

CASE IV.—Boy, six years of age; no apparent cause; taken sick with convulsions while playing in the street; these lasted nine hours; moderate fever; rapid pulse; vomiting; rigidity of neck and back muscles; hyperæsthesia of skin; very restless. Death on sixth day.

Case XXXII.—Female, twenty-one years of age; married; one child, aged sixteen months. Had been caring for child, which was sick; somewhat fatigued. Complained of head and backache. Pulse, 80; temperature, normal. Third day, temperature, 103.5° F.; pulse, 100. Eyeballs rolled up; head and neck drawn back. Bowels regular; urine normal; no albumin; no sugar. Red blotches on skin that came and went; urticaria; temperature, 100.5° to 102° F. for succeeding three or four days. Pulse about 100; unable to swallow or speak; answered questions by moving head; in no pain; sixth day, pulse, 60; temperature, 98.6° F. On the eleventh day had some pain in the stomach (indigestion?), neck became rigid. Pulse, 100, and temperature 98.6° F. during next two days. Then pulse sank to 45 and became irregular. On the thirteenth day some pain in right side of head and right eye. Heart gradually gave out and she died.

Case XCVI.—Boy, three and a half years of age; Italian. Headache; drowsiness; fever; on second day strabismus. Pulse, 45, irregular. On the sixth day he apparently recovered. Played too hard, and two days after developed same train of symptoms and died.

Case CXXV.—Female, aged twenty-nine; American. Married; one child, aged eight months. Does not nurse child. Neurasthenic; no apparent cause. No fever; much nausea; great head and backache; marked opisthotonos; double vision; deafness for several days and roaring in head. Retention of urine; catheterized eight days. Soreness of legs and arms; no eruption; pupils fully dilated; second day, paralysis of right arm; fourth day, right leg; fifth day, left leg; and sixth day, left arm; also paralysis of abdominal muscles and obstinate constipation; anæsthesia of limbs; reflexes gone. After three weeks has recovered slowly use of limbs except leg muscles, which she is still unable to use.

Case LXXXVIII. — Female, aged six; American. Frail child; had a spinal curvature for four or five years. No history except this. Fever; nausea; head drawn to one side; facial paralysis. On third day paralysis in all extremities; hyperæsthesia; soreness of joints; obstinate constipation; inability to use abdominal muscles. After two months paralysis continues, except slight movements of toes and fingers; considerable wasting. Bodily functions fair; mind and special senses normal. Facial paralysis passed.

These five cases illustrate the severer cases of the epidemic, many of which were fatal. There were a certain number of cases exhibiting odd and interesting symptoms out of the usual line.

Case XI. — Aged seven; American. Whooping-cough followed by broncho-pneumonia. During progress of the latter disease had loss of speech for two weeks; delirium; fever; left arm paralyzed. Recovered after two weeks.

Case LXXXVII.—Boy, aged four; American. Convulsions; double vision for one week; very drowsy. Paralysis of external rectus of one eye, which remains.

Case XCIX —Boy, aged thirteen; French. Had a fall injuring back, followed by fever, nausea, muscular rigidity of neck. From this, case ran along like an average case of typhoid fever, lacking marked typhoid symptoms except the fever curve. Fever lasted four weeks. Following this was paralysis of right arm and right leg. Paralysis improving.

Of the 126 cases of which I have notes, all except six were in the valley above described. Of these 6, 2 occurred in the town of Ludlow, on the east side of the Green Mountains, and 3 in Middletown, and 1 in Fair Haven, in Rutland County. The epidemic died out first in the towns first affected, and lingered latest in those affected last.[1] Of the thirteen towns in the Otter Creek Valley which have suffered from this epidemic, those that show the greatest number of cases—Rutland, 55; Proctor, 26; and Pittsford, 8—are immediately on this stream. The towns of Wallingford and Clarendon, also on the stream, suffered very little.[1]

It should be stated that there have been, among domestic animals in this valley, many cases of paralytic disease during the period of this outbreak. Deaths among horses have been found post mortem, according to at least one veterinarian, to be due to meningitis, and there have been also deaths among fowls and dogs described as paralytic.

It has been remarked by many physicians that the usual diseases of children, during the past summer, have been attended with exaggerated nervous symptoms. It is a source of great regret that in none of the fatal cases could an autopsy be procured, though extraordinary efforts were several times made to secure one.

In collecting statistics of this outbreak I have sought only those cases attended with marked nervous phenomena, like muscular rigidity, special sense disturbance, or paralysis, and no disease by name, seeking not to prejudge the character of the disease or anticipate a diagnosis. Without detailing further individual cases I have prepared a tabulated history of the epidemic as a whole, collecting the commonest features of the cases in my reported list of cases by themselves. I presume my list includes ninety per cent. of all the cases that have occurred.

Table 1.—Age and Sex.

Under 6 years	Male,	33 cases.
" "	Female,	16 "
" "	Not stated,	36 "
From 6 to 14 years	Male,	10 cases.
" "	Female,	2 "
" "	Not stated,	9 "
Over 14 years	Male,	8 cases.
" "	Female,	5 "
Stated between a few months and 9 years		7 "

Of the 119 cases in which the age is given, 85 are under 6 years, 21 between 6 and 14 years, and 13 were over 14 years. Of the latter was one case 70 years of age. The genuineness of this case might at first be questioned, but the train of initial symptoms was the same as in the milder cases of childhood, with paralysis of both lower extremities, clearing up after ten days.

Of the 74 cases in which the sex was stated, 51 were males and 23 females.

Table 2.—Nationality.

American	35
Irish-American	17
French	6
Jewish	1
Italian	1
Swede	1
Not stated	65

It has been noted that in the larger centres the races affected were oftenest foreign, while among the farming population Americans predominated. It has not been entirely confined to any one class, but has been most prevalent among working people and those whose sanitary surroundings were not of the best.

Table 3.—Previous Health.

Good	41
Poor	10
Not stated	75

Table 4.—Immediate Cause.

Fatigue	2
Whooping-cough	1
Over-heating	22
Chilling body	4
Indigestion	2
Typhoid fever	2
Trauma	2
Pneumonia	2
No apparent cause or not stated	89

[1] New cases, three in number, are reported from Proctor and Pittsford since the preparation of this paper. These towns were chiefly affected during August, and the last cases prior to these occurred about September 1st.

[1] The map on p. 676 will show the geographical distribution of the cases.

There has been but a single instance, so far as I can determine, in which there has been more than one case in a family, and since it has usually occurred in families of several children, I think it can be safely set down as non-contagious.

TABLE 5.—INITIAL SYMPTOMS.

A.

T. stated as above 103° F.	27
T. " " between 99° and 103° F.	22
Said to have had no fever	3
Not stated	74

B.—DURATION OF INITIAL FEVER.

Stated to be 1 day or less	4
" " " 1–2 days	2
" " " 2–3 "	6
" " " 3–4 "	7
" " " 4–7 "	26
" " " 7–14 "	4
No fever, or not stated	77

C.—NAUSEA.

Stated to have had nausea or vomiting	25
" " " " no " " "	1

D.—CONVULSIONS.

Stated to have had convulsions	12

All under 14 years.

E.—BOWELS.

Stated to have been constipated	3
" " " had diarrhœa	3

F.—BLADDER.

Stated to have had retention of urine	7
" " " " incontinence "	1

G.

Stated to have had muscular rigidity of neck or back or opisthotonos:

Fatal cases	5
Non-fatal	15

H.

Stated to have had hyperæsthesia of skin or soreness of muscles of the extremities:

Fatal cases	3
Non-fatal	24

I.—SPECIAL SENSES.

Stated to have had strabismus	2
" " partial blindness	1
" " double vision	2
" " deafness	1

K.—SKIN ERUPTIONS.

Stated to have had a simple erythema	29
" " urticaria	2

TABLE 6.—INITIAL PARALYSIS.

No paralysis	6	Fully recovered, 5; died, 1	
Not determined	7	"	7
Both legs	66	" " 43 "	4
Arm and leg (same side)	9	" " 2 "	1
One arm	5	" " 3	
One leg	6	" " 1	
Both legs and one arm	4		
Tongue and throat	2		1
Both arms	3		
All extremities	4		3
Extensors one thigh	1		
"Variously in arms and legs"	8	" " 1 "	1
External rectus one eye	1		
One side of face	1		
One arm and opposite leg	1		
All extremities and abdominal muscles	2		

TABLE 7.—PARALYSIS REMAINING AT TIME OF REPORT.

Glutei and lower spinal muscles of one side	1
Both legs	17
One leg	8
Both legs and one arm	3
Both arms	2
Arm and leg same side	6
Extensors one thigh	2
One arm	3
"Variously in arms and legs"	6
External rectus one eye	1
All extremities	2
One side of face	1
Extensors left thigh and right deltoid	1

It will be seen by these tables that 6 of these cases had no paralysis, as stated, but all of these had distinct rigidity of the spinal muscles, strabismus, or other symptoms referable to the nervous system, and are therefore included in this report. Of the 7 cases reported as "not known" to have had paralysis, or in which nothing is said of any paralysis, all died with distinct symptoms of acute nervous disease, and may be fairly supposed to have died in the initial stage.

Of those that died it will be noticed that, besides the 7 that succumbed early in the acute stage, 4 had paralysis of both lower extremities, 3 of all extremities, and 1 each had no paralysis, hemiplegia, tongue, and throat, and variously paralyzed.

Of those who had recovered fully at the date of the reports, which varied from two weeks to two months after the attacks, 5 had no paralysis, 43 had paralysis of both lower extremities, 2 of one arm and leg of same side, 3 of one arm, 1 of one leg.

While of the cases of which I have reports, 53 have still some paralysis at the time of the report, and it is probable that many of these are permanently disabled.

I am unable to make any statements based on statistics as to the number of cases in which there has been a wasting of the affected muscles, for the time is yet too short in most cases for marked wasting to have occurred. I hope later to be able to report on these wrecks of the epidemic. The composite picture presented by the facts I have elicited does not readily admit of a name. It is at once noticed that individual cases can be readily recognized as presenting a typical picture of poliomyelitis anterior, but that the variations from the text-book type of this disease are many and marked. Opisthotonos, eye symptoms, and hyperæsthesia are out of place in the phenomena of this disease, so that the epidemic, as a whole, presents notable departures from the regular features of the disease.

Again, cerebro-spinal, especially spinal, meningitis, is quickly seen in certain phases of this outbreak, but the season of the year, the general absence of the special sense disturbance, particularly ear disease, the low mortality, the absence of purpuric eruption (stated by some as the most important diagnostic point in this disease as an epidemic), are strong arguments against this diagnosis.

Without further detailing the arguments that present themselves to all of us for and against the claims of individual diseases to recognition in this connection, I am glad to be able to quote the opinions of high authority in regard to this point.

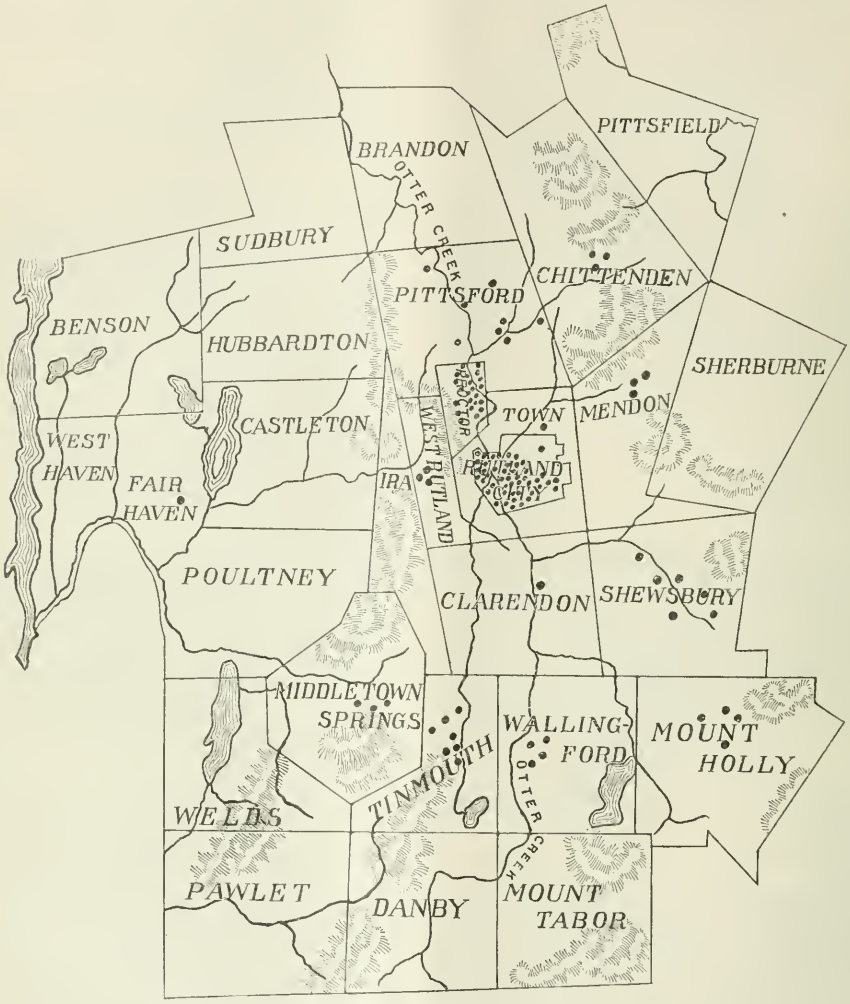
Dr. A. Jacobi, whose knowledge of this outbreak is gained solely from my written description, has very kindly permitted me to quote him on this point. He says: "All your cases belong to the same class, cerebro-spinal meningitis. They prove that nature does not walk in ruts as most of our text-books do, and that transitions and variations are common. Two years ago I made two autopsies in which the main lesions were in the lumbar portion of the spine. I have no doubt they had a chance to become paraplegic if they had lived. The frequency of paralysis in your cases is something very uncommon; so is your low mortality; both prove that your cases were more spinal than cerebral."

This opinion, coming from so high an authority in medicine, is of course entitled to the greatest respect.

Dr. M. Allen Starr saw, in September, ten of these cases, at that time, of course, in the chronic stage of the disease. His conclusions in regard to the epidemic, which I am permitted to give, are: "The cases seen, if seen without a history, would have all impressed me as cases of acute anterior poliomyelitis, without a doubt. The history does not appear to me to contradict this diagnosis, and while in some respects unusual, viz., in eye paralysis, in stiff neck and pain, there is not as much difficulty in assigning them to anterior poliomyelitis as there is in assigning them to cerebro-spinal meningitis. Epidemics of anterior poliomyelitis are not unknown."

He cites one reported by Cordier in *Lyon Médical*, January and February, 1888; one in Switzerland in 1889 (account not found); one near Boston, reported by Putnam two years ago, and one in Stockholm, reported by Medim, *Neurolog. Centralblatt*, 1891, p. 397. Dr. Starr further says, "As to eyes, there are some cases on record of ocular palsy with infantile paralysis. Sachs had such a case. As to pain, in the majority of adults and young people able to state symptoms, pain was complained of. I saw such a case yesterday."

The Stockholm epidemic, reported by Medim, an account of which Dr. Starr furnishes me, occurred in 1887. The disease first appeared in the month of May, and by August 9th had assumed an epidemic character. From the latter date to September 23d, Medim saw 29 cases, and knew of 44 during the summer, from May to November. The cases reported by him, as a whole, resemble more nearly the typical cases of poliomyelitis than those in the Vermont epidemic. Three of his cases were fatal in the acute stage. "There were noticed paralysis of the abducens in 5 cases, disturbance of speech in a few; in 1 case paralysis of the tongue, in several of the accessorius, and in others symptoms referable to the vagus Disturbance of the voice and paralysis of the muscles of mastication, and vaso-motor paralysis were seen in 2 fatal cases. In 1 ophthalmoplegia externa. At the time of this Stockholm epidemic of poliomyelitis, during August and September, polineuritis appeared and was thought to be due to the same source. This neuritis was followed by considerable tenderness; in some cases twitching and tremor; also there was ataxia of movement during convalescence. These neuritis cases, however, showed no wasting. Medim considered infantile paralysis a specific infectious disease, in whose acute stage the entire organism is affected. Autopsies by Rissler support this theory. He found in the spinal cord an acute parenchymatous inflammation in the anterior horns, with degeneration of the ganglion cells and secondary degeneration of nerve-fibres in the association tracks, in the anterior columns, and in the anterior nerve-roots; also in the nuclei of the hypoglossus, vagus, facial, and abducens nerves. In most of the cases the anterior horns were particularly affected; in other cases also the peripheral nerves and



Rutland County. Cases indicated by black dots.

brain cortex. It was possible that all the nerve nuclei in the medulla and pons should be affected."

I have quoted freely from Medim's report because his is the only epidemic of poliomyelitis of which I can secure accurate facts. Dr. Charles L. Dana has also permitted me to quote his opinion of this epidemic. His knowledge of the outbreak was likewise gained from my written statements to him, and from an examination of the cord and brain of a fowl sent him, which was suffering from paralysis of legs and wings. His statement is as follows: "Dr. Dunham, of the Carnegie Laboratory, very kindly made a bacteriological examination of the cord and sciatic nerve of the fowl; but with negative results. Microscopic examination shows an acute poliomyelitis of the lumbar part of the cord, and no meningitis. Dr. Dunham's inoculating needle did not strike the affected part.

"Apart from the results of this case, which, of course, may have no relation to the epidemic, I feel the greatest possible confidence that the disease is in most cases a true anterior poliomyelitis."

Of course the epidemic and apparently infectious character of the disease points to a microbic origin. That epidemic poliomyelitis has such an origin is not a new hypothesis. Dr. Dana in an early letter to me says: "Roger, Thornot and Masselin, Bourges, and Vincent, produced poliomyelitis in rabbits and guinea-pigs by inoculation of the coli bacilli, streptococcus of erysipelas modified by culture."

On this point it is to be hoped that Dr. Dana's further examination of the cord and brain of the fowl will throw some light.

In a recent letter Dr. Starr further says that "there is now a tendency to revise the pathology of poliomyelitis," the regular descriptions of which are founded on Charcot's statements. Dr. Starr gives me the gist of an article published by Goldschreider in the *Zeitschrift für klin. Med*, 1892, in which he says that his (Goldschreider's) conclusions, founded on a review of all the cases with autopsy, was that the disease began with a "very intense congestion of the central arteries of the spinal cord which come up on each side of the central canal, and spread out in the central gray matter and into the anterior horns. These arteries have branches passing backward into the gray matter of the posterior horns, but the posterior horns are chiefly supplied with blood from the peripheral arteries, and hence are less affected when the inflammatory condition is limited to the distribution of these central arteries. After the engorgement of all the arterial twigs, diapedesis occurs and the surrounding nervous tissue is permeated by small cells and by serum. It is this choking of the gray matter by the inflammatory products which leads to the suspension of functional activity, and when, as in many cases from impoverished nutrition, the cells of the anterior horns are actually disintegrated by the inflammatory products, permanent destruction of the nerve-tissue ensues.

Goldschreider believes, therefore, that the primary condition is a congestion in the domain of a definite set of arteries, quite comparable to the condition occurring in the lung in a pneumonia, and in the intestine in a typhoid fever.

Siemerling has also written a very careful article on the "Pathology of Infantile Paralysis," in the *Archiv für Psychiatrie* for January, 1894. His conclusion is as follows: "After a careful review of all the literature, we reach, therefore, the following conclusion, that in the pathogenesis of infantile spinal paralysis the inflammatory lesion of the interstitial tissue in connection with a distention of the blood-vessels, especially in the region of the anterior spinal arteries, plays the chief *rôle*. A primary inflammation of the ganglion cells, in the sense given by Charcot, is not to be admitted."

Dr. Starr further says: "One more point. If you consult the descriptions given of congestion of the cord, you will find many of the general symptoms of pain, stiffness of the muscles, pain on movement, and general tenderness, which were present in the early stage of your epidemic. If now we grant that this newer pathology is correct, these symptoms are easily explained on the theory that the congestion and the inflammatory processes were in your epidemic not limited to the domain of the anterior spinal arteries, but extended to the posterior parts as well."

The quotations thus liberally taken from so competent authorities leave very little to be said in regard to the pathology or diagnosis of our disease. Admitting Dr. Starr's reasoning in regard to the congestion of the posterior as well as the anterior portions of the cord to be correct, supported by his citations from Goldschreider, Siemerling, and Rissler, the phenomena of this epidemic can be reconciled with a diagnosis of poliomyelitis. The pain, hyperæsthesia, special sense disturbance, and muscular rigidity, the most important departures in our epidemic from the established symptoms of poliomyelitis, are rendered explainable under this newer pathology. A diagnosis of epidemic cerebro spinal meningitis would certainly be more strained. The disease, cerebro-spinal meningitis, in epidemic form being more common, its symptoms and behavior are correspondingly better understood than poliomyelitis.

Gowers states that it has usually prevailed chiefly in winter and spring, ceasing about July. This seems to be very uniformly agreed to. Its features are discomfort, later pain in the head, backache, vomiting, stiffness of neck and back muscles. Pulse not uniformly rapid; temperature usually very high, 104° to 106° F. Eruptions, especially herpetic and purpuric, are common. Cranial nerve symptoms, and deafness and blindness as sequelæ, are the rule in a certain number of cases. Cases, and even epidemics, of an abortive form of this disease are not unknown. Gowers states that the mortality varies from twenty to eighty per cent. Hemiplegia, and in spinal cases paraplegia, are occasional sequelæ, but they are always attended by rigidity and contractures of the muscles. These are the long-recognized features of epidemic cerebro-spinal meningitis. There must be admitted to be some marks of similarity between this description and our epidemic. The almost universal paralysis in our cases, and its irregular and varied character, are entirely foreign to the generally described features of cerebro-spinal meningitis. Likewise, too, the season of the year, the general absence of eye and ear impairment, and of herpetic and purpuric eruptions, the low mortality, and the absence of contractures.

In an epidemic like this, in which there is a blending of the symptoms of two or more diseases, the decision must rest between the symptoms which are most uniformly present and which are most pathognomonic of each disease. And while, as Dr. Jacobi, speaking—we are always glad to admit—from a vast experience and long study, intimates that there are important exceptions in actual life to the stereotyped description of the books, the exceptions in this outbreak to the long established symptoms of cerebro-spinal meningitis seem to be so marked as to really overshadow those that would be left to establish that diagnosis. Under the newer pathology given of poliomyelitis, symptoms referable to the meninges and cerebral ganglia can be reasonably explained.

In conclusion, let me acknowledge the uniform courtesy with which the practitioners of Rutland County have responded to my requests for statistics of this outbreak. The list includes nearly all the practising physicians of this county. Comparatively few of the cases have fallen under my direct observation, and without their aid it would obviously have been impossible to make any record of this unparalleled epidemic approaching completeness.

Army Medical Museum.—There are now 32,269 specimens in the Army Medical Museum in Washington. The number of specimens received during the year ending June 30, 1894, was 1,363.

PREMATURE DELIVERY OF A DEAD CHILD, INDUCED BY ACUTE APPENDICITIS, WITH REMARKS ON APPENDICITIS IN WOMEN.

By PAUL F. MUNDÉ, M.D.,

NEW YORK.

Although there is no real anatomical or pathological reason why acute inflammation of the appendix vermiformis should not occur as frequently in the female sex as it does in the male, it is only within recent years that the reports of appendicitis in women have become so numerous as to attract attention. One reason for this apparent immunity of the female sex from this disease probably was that in the ante operating days such inflammations in the right iliac region were looked upon as pelvic "cellulitis," or peritonitis, the incorrectness of this diagnosis never being exposed, either because the patient died of general peritonitis and no autopsy was made, or because the abscess fortunately opened into the bowel, the pus was evacuated per anum, and the patient recovered without a suspicion of the true nature of the case.

I remember perfectly seeing such a case of supposed inflammatory exudation between the layers of the right broad ligament, some twenty years ago, in which I ordered the usual blister and hot-poultice treatment. The idea of an appendicitis, or perityphlitis as it was then called, did not occur to me, although I had shortly before assisted at several operations for perityphlitic abscess in men. Some two weeks after seeing this woman I was called to her house, and found a fluctuating swelling in the median line between umbilicus and pubes, which I aspirated. The true nature of the case was then revealed, for the fluid removed had a decidedly feculent odor. I incised the abscess freely, and in course of time the sinus healed.

Since it has become the rule to open the abdomen and remove all pus sacs, whether of ovary or tube, as soon as the presence of suppuration is discovered, and in cases where the pus points toward the abdominal skin to open the abscess there freely, as in a subcutaneous abscess occurring anywhere else, we have met with more and more cases of unsuspected abscesses of appendiceal origin in the female, the existence of which had been masked by the great frequency of inflammatory and suppurative disease of the uterine appendages. I have seen in consultation and in the hospital at least half a dozen cases of exudate in the right ilio-ovarian region which were supposed to be due to pelvic peritonitis or cellulitis, where the high location of the exudate and the absolute freedom of the right appendages showed the exudate to be caused by appendicitis, and the opening of the abscess confirmed this diagnosis. In one case an ovarian tumor of the size of a grape fruit occupied the right hypogastric region; the pain and high temperature were supposed to be due to an inflammation of the cyst, probably from a twisted pedicle. Vaginal examination revealed nothing but a rigid vaginal vault. On opening the abdomen the ovarian cyst was found not inflamed, and after its removal an abscess was discovered between the layers of the broad ligament which had worked its way down from the right peri-appendiceal region. The appendix was found to be gangrenous.

It would be well, therefore, to bear in mind in every case of inflammatory exudate or suppuration in the right half of the female pelvis, particularly if the exudate extends up as high as, or higher than, the crest of the ilium, that the primary cause of the exudate may be an appendicitis, whether the uterine appendages of that side be inflamed or not. If the appendages are healthy, and the exudate is due to inflammation of the appendix vermiformis, the finger per vaginam will find the right vaginal vault empty, the uterus normally movable, and the exudate not reachable from below. We must not forget another possibility, however, namely, if the exudate extends much above the crest of the ilium, it and the suppuration may be of perinephritic origin, and thus retro-peritoneal.

I have recently seen, in consultation with Dr. D. Froehlich, a lady just recovering from an attack of severe pain in the right iliac region, the seventh in three years, when under anæsthesia the swollen, curled appendix could readily be felt through the abdominal wall.

I will mention, *en passant*, that occasionally an entirely unexpected fortunate termination of the case may be brought about by the bursting of the perityphlitic abscess into the bowel, whereupon the swelling in the right iliac fossa disappears and rapid recovery takes place. I have seen two such cases, in one of which the diagnosis was made and operation fixed for the following day; in the other, the swelling was in the median line, resembling the distended bladder, and exploratory aspiration was to be performed on the next morning. In both cases during the night a chamber-vessel full of stinking pus was evacuated from the bowels, the swelling disappeared, and the patient rapidly recovered.

The above instances show how the diagnosis of an appendicitis in the female may be masked, and even rendered impossible before the operation, owing to the common inflammatory diseases of the uterine appendages, even more frequently than is the case in the male. My object, however, in this short paper is rather to lead up to the occurrence of acute appendicitis at a particular time in a woman's life, which has, to my knowledge, heretofore not been mentioned, than to discuss the general subject of appendicitis in the female. I refer to the influence which inflammation of the vermiform appendix occurring during pregnancy may have on that condition and the welfare of the child.

So far as I am aware there is no case on record of appendicitis during pregnancy. There is, of course, no reason why such an inflammation should not occur at that time. But, if any such case has been reported, I have not seen it.

The rarity of the occurrence and the practical importance of thinking of its possibility, and consequently detecting its presence at an early stage, have led me to report the following case which recently came under my observation:

On the night of September 21st I was called by Dr. E. Hochheimer to see, with him, Mrs. F——, then at the end of the eighth month of her first pregnancy. I saw her at about one o'clock on the morning of September 22d, when she was in active labor, the mouth temperature being 104° F.; the pulse, 140; the face much flushed and expression anxious. The history given me by the doctor was, that on the 15th he was called to see the lady for "pain and tenderness in the lower part of the abdomen, equally severe in the median line and on both sides. This was accompanied by a rise of temperature to 101° F., and eventually to 102° F. on the fourth day. Rest in bed, light diet, and hot-water bag, together with occasional ⅛-grain doses of morphine p.r.n., were ordered. The pain gradually subsided and the temperature fell till the evening of September 20th, when it was 99° F., and she was expected to sit up on the following day. On the 21st, about 9 A.M., she was seized with atrocious pains in the pelvic region, accompanied by pronounced chill, and temperature 101.5° F., at the same time labor pains began and continued until you saw her." The foregoing account is from a letter to me written after the patient's recovery. With a large obstetrical experience and considerable acquaintance with appendicitis from personal observation, it still, very naturally, did not occur to Dr. Hochheimer to attribute the pain and fever in this case to so unexpected a cause as appendicitis, and when I saw the patient the pains were so universal over the whole lower part of the abdomen, both during and between the uterine contractions, that it was impossible to localize any one particularly painful point. About 2.30 A.M., on September 22d, a dead child was born without any artificial assistance. Desquamation of the epidermis on one leg showed that the child had been dead at least twenty-four hours. There was no difficulty in delivering the placenta, nor any post-partum hemor-

rhage, but the patient went into a semi-delirious condition, and appeared very much prostrated, so that further examination was postponed. I was at that time in great doubt as to the cause of the fever and premature delivery of a dead child, particularly as the history gave the very decided possibility of infection from scarlatina and diphtheria, to both of which diseases the patient had been exposed during the two previous weeks. The abdomen, even after delivery, was universally so tender that no reliance could be placed on the location of the pain as an aid to diagnosis. On seeing the patient again, about twelve hours later, however, decided dulness could readily be made out, together with a very acute pain on pressure in the right iliac region, the outlines of the uterus being clearly distinguishable. Per vaginam, the right vault was found free. No particular pain elsewhere in the pelvis or abdomen. Temperature now 102° F; pulse, 120.

The probability of general scarlatinal or diphtheritic infection was now excluded, and the choice lay between typhoid fever, pelvic peritonitis, and appendicitis, of which I chose the latter as the most probable. I had never heard of or seen a case of this kind during pregnancy, but could see no reason why it might not occur. And I ascribed the severe pain on the morning of the day preceding delivery to the perforation of the appendix and the discharge of pus into the peri-cæcal cellular tissue, since its discharge into the general peritoneal cavity would have been followed by general peritonitis and speedy death. At any rate the peritoneal cavity could safely be considered closed from the cavity of the abscess by adhesions. As the patient's condition was much improved, I preferred to wait until the immediate shock of the confinement had passed away, especially as rather intractable bilious vomiting came on, which depressed the patient both morally and physically. Dr. Hochheimer and I therefore decided to defer the inevitable operation for appendiceal abscess a few days, so long as the patient's condition allowed it; my own chief reasons for this postponement being the absence of any symptoms requiring immediate operation, the undoubted sealing off of the abscess cavity from the general peritoneal cavity, and the possible danger of puerperal infection from the abscess after it was opened. With the understanding that I should see the patient again, three days later, unless something unexpected occurred, I left her on September 24th, and on the 27th I found that, after nearly normal temperature on the 24th and 25th, the thermometer had again shown a rise to 102° F. on the 26th, and was 101.8° F. when I saw her. The dulness in the right iliac region was as marked as ever, although the pain was less severe. I now advised immediate operation, which was deferred until the next day in order that Dr. Willy Meyer, at the request of the family, could be present to examine the case and assist at the operation. Accordingly on the 28th, Dr. Willy Meyer concurring in the diagnosis and indication for operation in his presence, and with the assistance of Drs. Hochheimer and B. H. Wells, I opened the abscess, which was found completely closed by a thick wall of agglutinated intestines. Drainage tubes were inserted, and the after-treatment left to the care of Dr. Hochheimer. Convalescence was practically uneventful.

I need scarcely say that the death of the child was due to the high temperature, and the premature labor to the effort of the uterus to expel its dead contents. It is providential that the high temperature preceding, during, and following labor did not produce, at least, an acute endometritis, which would certainly have been the case had the cause of the fever been a general septic infection. As a preventive, an ice-bag was kept on the abdomen for several days after delivery.

I am indebted to Dr. Hochheimer not only for the opportunity of seeing the case, but also for the permission to publish it as an example to other physicians who may happen to see pregnant women with acute pain in the right iliac region accompanied by fever. I think that in a future similar case I would open the abscess at once, as soon as a reasonable probability of its existence could be settled, without reference to the pregnancy or the impending or completed delivery. I would rather take the chances of puerperal infection from the abscess than of its unexpected rupture at any moment into the peritoneal cavity.

20 West Forty-fifth Street, November 8, 1894.

A CONTRIBUTION TO THE STUDY OF THE LOCATION AND PHYSIOLOGY OF THE VISUAL CEREBRAL CENTRE.

As Shown by a Case of Monocular Amaurosis which Terminated in Complete and Permanent Recovery.[1]

By ALFRED HINDE, M.D.,

Chicago, Ill.

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The sparseness of its literature, because of infrequency of occurrence, the apparent seriousness of the clinical picture, and a desire to aid in elucidating an interesting brain condition, prompt me to briefly record the following case.

S. D. T.——, female, American, single, age nineteen, school-teacher, a florid blonde, in height, five feet six and one half inches, and weighing 145 pounds, was referred to me from an adjoining State, because of total blindness of the right eye.

She detailed a good non-neurotic family history, and had had no severe personal sickness. At the age of seventeen she first menstruated scantily, and thereafter repeated the function at intervals of five weeks for the first year. During the succeeding twelve months the intermenstrual period of time had shortened, and, when the case presented itself, was only of three weeks' duration. The discharge continued to be of slight amount, lasted for three days, and its commencement was associated with pelvic distress, as well as before, during, and after the period; there was considerable nerve-storm, that presented itself in an irritable temper, with anorexia and insomnia, besides vulvar heat, and frequent micturition.

Mentally bright, industrious, and of studious bent, she said she had lately lost only slightly in weight, but greatly in bodily strength and endurance, so that the least physical exercise, or mental application, resulted in extreme exhaustion, and produced a perfect whirlwind of unrest.

When eighteen years old, and "preparing an essay," for a school examination, she was under considerable mental strain, and was seized with a condition of uncontrollable nervousness which lasted one week and necessitated her return home. During this entire time consciousness was retained, but she lost all control of herself —would laugh and cry alternately—and though realizing her ludicrous behavior, she seemed utterly unable to prevent her strange actions. With rest of brain mental quiet ensued, but during the past year minor recurrences have happened, whenever her surroundings were not to her liking, or when she again attempted further studious efforts; and the attacks were most prone to occur at the menstrual periods.

During the last week of December, 1893, she became a subject of the grippe, and soon after its onset she noticed that the vision of the right eye was failing, and it became progressively worse during the following six weeks, so that at the end of this time not only no objective vision was retained, but also perception of light was annulled; day and night were alike to this eye. She observed that her recognition of colors, and that of objects, was gradually reduced; and that for light was the latest to be perceptibly affected.

This condition of right-eye blindness had lasted for

[1] Read before the Chicago Medical Society, October 15, 1894.

about six weeks when I first saw her on March 31, 1893. At this time there was no apparent disease of motility, or structure of either eye; ophthalmoscopically both were alike and normal. The pupils had a diameter of 4 mm., were circular, and the iritic reflexes—direct and consentaneous—were actively and equally present in the two eyes. Of the left eye there was no complaint. It had more than average vision and read half of the $\frac{20}{xv}$ types of Snellen at twenty feet distance. Its color-sense was perfect. The visual field, however, was inconstant. At the commencement of the testing it was perfect throughout and of full size, but before the close of the examination it contracted slightly in its periphery, above, below, and nasally; or in those portions of the retina that are least richly supplied with nerve-elements. This decrease in size of the visual field was solely due to exhaustive effort, however, for after eye rest the field was again found to be full sized, but again contracted, as before, on continued testing. This apparent asthenopia of the peripheral nerve-tissues is of cortical origin, because, in cases where both visual fields are present, a corresponding simultaneous contraction in the untested field occurs, thus showing an exhaustion of function of central location.[1]

Covering carefully the left eye, a concentrated beam of the strongest gas light, cast within the pupillary area of the right eye, was said to be totally unseen, and surprise flashes were without conscious reflex results. The diplopia confusion tests for simulated blindness of one eye, together with Stilling's test of colored letters on a black ground viewed through colored glasses, were negative. Thus was proved the presence of the claimed right amaurosis.

The special senses of taste, smell, and hearing, and that of ordinary cutaneous sensation, were normal and alike in both halves of the body.

Digital pressure over the right supraorbital notch elicited acute pain, and deep pressure over the ovarian regions, more especially the left, produced a sickening weakness which spread throughout the body, perspiration followed and she appeared to be considerably disturbed and was very restless. She stated that the symptoms present were similar to, but less severe than those experienced at the first nervous seizure of spontaneous outset, and almost exactly like the minor attacks that occurred later. Here was present an ovarian hyperæsthesia, besides an increased sensitiveness of the superficial branches of the ophthalmic division of the right fifth nerve.

Galvanic testing developed photopsia in the left eye, with one-third the current strength required to produce the same result in the right eye. A 5-milliampère current was needed to arouse flashes of light in the right eye when first applied, but before the termination of the testing a weaker current was sufficient to start them. When compared with the left, this indicated a markedly decreased galvanic reaction of the right visual tissues, together with the probability of restoration to the normal after repeated galvanization—because of the improvement in light perception before the close of the sitting.

The right auditory nerve did not develop the Brenner reaction even with 6-milliampère currents; whereas, continued hissing tinnitus was produced in the left ear on KaCl, and slight transient hissing on AuO, the testing pole in each instance resting in the external auditory canal.

Here we had a patient in whom, up to puberty, there had been no complaint, but when that time arrived, with its disturbing nerve-storms, the cerebro-spinal system had to share with the sympathetic the existing nerve-stream—the diversion of a portion of which resulted in a hyperæsthesia of the pelvic viscera. Along came the grippe infection, reducing still further the already weakened nerve-tone, and in some indeterminate way its ptomaïnes, acting locally upon especially suitable tissues, produced the right-eye amaurosis. Thus we had present the anomalous condition of a strictly localized cerebral anæsthesia, together with an ovarian hyperæsthesia, briefly, a disarrangement of forces rather than a destructive process. The equal pupils and the absence of ophthalmoscopic signs proved eye escape. The presence of the iritic reflexes, as first pointed out by Von Graefe[1] in 1868, excluded disease as far back as the corpora quadrigemina. The motion of the irritant luminous ray was still appreciated by the right retina and so transferred, through rhodopsin-reduction and other chemical processes, to the molecules of its bacillary layer, and hence backward to be switched off at the reflex centre and returned by the third nerve-trunk, thereby excluding disease in this arc. The optic thalamus and the posterior limb of the internal capsule had escaped, for there were no evident symptoms present implicating these areas. Therefore, we had remaining only the termination of the visual path in the left occipito-angular cortex, and whatever normal stimula were conducted to this part were without conscious perception or effect. Here, we presumed, was the site of the pathological process, and the cortical nerve-cell as the part especially affected, and, because of the increasing appreciation of galvanic irritation, we considered the condition present as one of simple inhibition of function—a rare example of suppression of visual will, or visual consciousness of the left cortical centre, and that besides the psychical condition there was also some uncertain molecular change in the affected cells. Because of this interpretation, a favorable prognosis was given, and it was thought that insufficient time had elapsed for permanent changes in nutrition to result. Yet this opinion must be regarded as very venturesome because in functional inactivity, as in excessive use, there are physical changes, and if the abolition is sufficiently prolonged these may be irremovable and function remain permanently[2] abrogated. Our hopeful opinion was, moreover, founded upon the ready institution of returning function as shown during the galvanic testing.

No time-limit for available eye-use was, however, hazarded because of the well-known persistence of many cases of central neurasthenic, or hysterical, asthenopia, *i.e.*, those cases where there is present perfectly acute vision momentarily, but in whom the sight melts rapidly away upon attempted continued use, this being most probably due to insufficient nerve charging of the tissues employed, or else to an impairment of visual will.

Remembering the psychical element in our case we directed her to practise and exert her will upon all occasions where self-control was endangered; to restrain her flightiness; to avoid over-excitement and over-fatigue, both mental and bodily, and to live the details of a quiet daily life with clock-work regularity. The usual medicines for the hysterical state were given. Above all things her impressionable mind was not permitted to grasp the idea that she was the subject of any possibly irremovable physical imperfection over which she might pore. She had no womb to be tinkered for imaginary disease from my saying so, and her thoughts were steered away from this end of her anatomy.

We thus avoided the institution of that aura of melancholy that too often surrounds such cases and engulphs them, alas! impenetrably, so that all our efforts to remove their fancied and real ills are without avail.

In ordinary health the storehouse of the nerve-centre is surcharged with nerve-power, and but a small portion of it is in actual use at any one time, the remainder being retained to draw from, so that continuous work without conscious fatigue can be accomplished; but here the storage battery was only sufficient to keep charged temporarily the nerve-tissues of this brain—feeble efforts resulted in rapid exhaustion, and in the elements of the left visual centre it appeared to be entirely lacking.

To aid the restitution of a normal condition the con-

[1] Schiele: Archiv f. Augenheilk., Bd. xvi., quoted by Gowers, Diseases of the Nervous System, vol. ii., p. 147, 1893.

[1] Berliner Klinische Woch., 1868, p. 22.

[2] For examples see Gowers, loc. cit., p. 165.

stant current was applied with the anode to the closed right eyelids, and the cathode to the left occiput, thus trying to bring within the range of the ascending current the entire visual path. The current strength used was only sufficient to arouse and barely maintain the sensation of photopsia in the right eye. The séances were daily and lasted about ten minutes. The applied current was started at zero, steadily increased to the exciting strength, and after continuing it at this point for the requisite time, it was gradually reduced to zero again without a break. The necessary current was always strongest at the beginning of each sitting, and before its close had to be reduced to avoid excessive photopsia with dizziness. The first treatments needed a current-strength of 5 milliampères, but as function became restored weaker and still weaker currents were sufficient. General galvanization and faradization were also resorted to.

Improvement was rapid, and after the fifth treatment, and with the left eye carefully covered, a concentrated beam of gas light suddenly flashed into the right eye, startled the patient, and she said she "felt a flickering sensation" in it, and a feeling of weakness diffused itself throughout the body. On further examination, at this time, it was ascertained that only the central portion of the retina was momentarily aroused by the strong light, the remaining parts being wholly anæsthetic. The constant current had produced irritation sufficient in the optic tissues to start the subjective light-flash, but in the feeble recognition of this strong light we had the first evidence of actual light perception—the light-sense was awakening. From this on a daily improvement in light sensitiveness of the right eye was perceptible both quantitatively in the centre of the retina as well as in increase of area of sensitive tissue. The first faint flicker of light-perception grew steadily stronger, and a weak flicker spread nasally over an increasing surface. Progressing uninterruptedly daily, the nasal limit of the retina "felt the flicker," and, latest of all, the temporal periphery became sensitive to it. By this time the central retina had advanced in sensitiveness, so that a very much weaker light was recognized as such. Of natural light, that of the morning was first seen on awakening, but after being observed for a short time it faded entirely from view. Each morning it appeared stronger and stronger, lasted longer, and finally continued all day. Large objects then began to appear, very indistinctly at first and only temporarily. In this we had the first commencement of the returning form sense—and eleven days after the beginning of the light sense. This objective vision improved rapidly, and progressively smaller and smaller objects appeared to view, and the larger ones, first seen, became more clean-cut in outline. Objective vision was also only temporary at first, but became more and more permanent with voluntary exercise and time. In forty-eight hours after the initiation of objective vision, Snellen's 200 feet type could be read at six inches; and twenty-two days still later, the vision of this right eye was $\frac{20}{-}$, and it could read the smallest type of Snellen with the near point at six and one-fourth inches. Nervous asthenopia was still a prominent symptom, however, for vision for minute objects was only transient. As the light-field had contracted on effort from periphery to centre, and, at first, had totally disappeared, so the patient said she noticed the form-field get steadily smaller and smaller, until only the type-letter looked at remained visible; and during the first days even this melted from view, all that remained was merely perception of light.

About the return of the color sense we have no exact data further than that it was gradually restored, but more rapidly than either that of light, or form, and last of all, but it finally became as acute as in the left eye.

From this observation it would seem certain that the light-sense and form sense are separate and distinct from each other. The rapid return of the color-sense interfered with our observation of it, and I regret greatly that I failed to map out the color-fields of each eye for purposes of comparison. From the fact, however, of the frequently observed cases of simple color hemianopsia, without any affection of the half fields for objects and for light, leads us to believe in a separate centre for colors also. That there are separate centres for light, form, and colors has been recently asserted by Wilbrand,[1] quoted by Gowers, who adds that for light and form "it is not yet certain that this is so," but, on account of the cases of simple color hemianopsia, he appears to agree with Wilbrand, who suggests that the color centre "is in some part of the occipital cortex in front of the apical region," and Swanzy[2] places it in "the posterior part of the superior and inferior occipito-temporal convolutions."

The observation of cases of crossed amblyopia has been frequently made. In these there is simply a reduction of the normal acuity of vision of the eye opposite to the lesion—there is still remaining a portion of the visual function for light, form, and color. Our accompanying case, however, is unique, from the fact that there was a complete suspension of the function of the right eye, and, lasting several weeks, a true amaurosis. I am not conversant with a strictly parallel case. Those that most nearly approach it are the transient monocular amauroses of purely hysterical origin.

That the area of disease was cortical there can be no doubt. That the half vision centre of the occipital lobe was not involved is equally patent, yet it usually is affected in the cortical visual cases. The few autopsies in cases of crossed amblyopia point to the angular region as the seat of disease, and Gowers adds that the field of the same side as the lesion is also represented, but to a much slighter degree than the one of the opposite side, because there is usually a "slight restriction of the field of the eye of the same side." This localization of the diseased site perfectly fits this case, and we are led to presume that the intensity of the acting bacteriological process in our case was greater, in order to completely annul function, than occurs in the ordinary cases of crossed amblyopia. If we are correct in the selection of the seat of the disease we choose at the same time the site of the light, form, and color centres, viz., the "occipito-angular" region. The phenomena of disappearance and return of these senses would seem to imply either separate centres, as Wilbrand and Gowers maintain, or that these functions are dependent upon different degrees of physiological life of a single centre.

We are here treading on purely polemical ground, however, because though numerically observers are agreed that the visual cortical centre in man occupies the occipital lobe, yet it is by no means decided that it is solely limited to this district, but that more probably it extends anteriorly into the angular region, as Ferrier first pointed out. Therefore, with doubts as to the exact limitation of the whole visual cortical centre we can readily understand the greater difficulty of the exact localization of its several parts for light, form, and color. On this account further exact observations along this line are greatly needed, and I reiterate Gowers's request that bedside examination of medical cases should be carefully carried out and the results recorded. This field is particularly one for the family physician.

Before full restoration of visual acuity of the right eye, with equal endurance for work of the two eyes, there was a period of fifty-six days of treatment. By daily exercise the time-limit for comfortable use of the right eye became steadily more and more prolonged until each eye became alike in its working power. Distinct and easy near vision lasted in either eye only twenty-three minutes, and the near point was farther off than the age of the patient would indicate—showing an impairment of accommodation. With + 1.25 D lenses the normal near point (4 inches) was restored and with these glasses

[1] Gowers, loc. cit., pp. 147 and 155, 156.

[2] Swanzy, Ed. 1892, p. 409. He also adds, p. 410: "It is also probable that the centres for the three visual perceptions of light, form, and color are distinct from each other, and that they are arranged, as it were, in layers, one over the other."

binocular vision was comfortable for a greatly prolonged time. The left eye that had read half of the $\frac{20}{xx}$ types on the first testing, now read correctly every letter of this line. This would indicate an improvement in the formsense of this eye and predicates a slight previous affection of its centre also, or may be it was due, as Gowers claims, to the influence of the diseased centre belonging to the other eye. The hysterical state appeared to be completely overcome, and with greatly improved general health she left for her home. Since then further improvement has occurred. She has resumed her occupation of teaching, and now, seventeen months since her discharge, without any signs of eye-relapse or impairment of general health, we have every reason to hope for the further permanency of the recovery.

In conclusion, I may say that the evolution of this case, as told by the patient, and its involution as noted by myself, form one of the most interesting and perfect clinical pictures that it has been my good fortune to observe.

16 Laflin Street.

THE RATIONAL TREATMENT OF DIPHTHERIA.[1]

By B. VAN D. HEDGES, M.D.,

plainfield, n. j.

The author's warrant in presenting this subject for your consideration lies in the realization that we are living in an age when men and methods are judged alike by the cold logic of practical results.

In an uninterrupted series of cases, upon which this paper is based, we have the pleasure of reporting thirty-five per cent. recoveries in cases of croup under five years of age demanding intubation, and a mortality of only six per cent. in diphtheria not requiring operative interference. These results, we believe, are directly due to methods of treatment which it shall be our pleasure to discuss this evening.

How interesting it would be, had we the time, to turn our gaze backward and note the different remedial measures in vogue from century to century, all of them empirical, because founded upon a faulty conception of its true pathology and etiology. But the mists have cleared away, the darkness has had its dawn, and in the clear, strong light of modern research we are able to positively assert that diphtheria is due to the presence of a definite specific micro-organism that can be isolated and detected in the very earliest hours of the disease, and that it is primarily and essentially a local trouble, with secondary constitutional symptoms, due to the absorptism of septic products from the local seat of lesion. Upon the proper appreciation of these two fundamental truths rests the modern rational treatment of diphtheria.

It was the author's privilege, during the past year, while resident physician at the New York Foundling Hospital, to have had under close personal observation some sixty-seven cases of genuine diphtheria, proven to be such in each instance by bacteriological examinations, conducted by Dr. Wm. H. Park, of the New York Board of Health. The assistance thus rendered us by Dr. Park in enabling us to effect prompt isolation and early treatment was most valuable. From this series as well as from the accumulated experience of others in this same institution during former years, the writer begs leave to draw the conclusions embodied in this present paper. He is indebted to the staff of attending physicians for their kind courtesy in allowing him full use of the histories.

If, then, diphtheria is a local trouble, with constitutional symptoms dependent upon the amount and virulence of the toxic ptomaïnes developed and absorbed into the system from this primary source, we must first consider the

Local Treatment.—Welsh and Abbott have shown, after long and careful investigation, that the bacilli are most abundant in the very outermost layers of the membrane, and comparatively absent in the deeper portions; hence the indication is to attain thorough local disinfection, and not necessarily the entire removal of the membrane—a radical measure which is further contra-indicated by the fact that we leave behind us a raw, bleeding surface, a most tempting field for the reinvasion of the hosts of germs that hover about.

As to the best means for obtaining local disinfection it would seem as if the neutral solution of peroxide of hydrogen was the most valuable. Williams, of Boston, claims the best results with a strong concentrated thirty to fifty volume solution. Squibb's ten volume solution, with the addition of a small amount of bicarbonate of soda to neutralize the hydrofluoric acid which is so often present, proved equally efficient, and has the advantage of being much less irritating. Bichloride of mercury has many drawbacks. To do its work well, it must be strong, yet in this strength, if swallowed, it may give rise to serious symptoms. The writer will never forget the sudden and violent death of a little one under his care, due to the accidental swallowing of three large syringefuls of a 1 to 3,000 solution. Carbolic acid and the stronger antiseptics are all open to the same objection, but in peroxide, with its powerful affinity for inorganic matter, we have a remedy which thoroughly disinfects the outer layers of the membrane, and has no bad effect upon the stomach even when swallowed in large quantities.

If the child is tractable and will allow the tongue to be depressed, either an atomizer or a hard rubber syringe can be easily used. But when the little one fights and struggles against such interference, it is best to simply irrigate through the nostrils, rather than incur the risk of provoking cardiac failure; and yet we must remember that the very reason the child is sick, the very reason we fear cardiac failure, is because of these highly toxic products of the Loeffler bacilli. The extent to which we can safely proceed in our efforts at local disinfection must always be determined by the attending physician upon the merits of each individual case.

After the throat has been irrigated and cleansed with peroxide, we would advise the application of papoid, either in the form of a powder—and for this purpose Osborn's insufflator is best—or a strong solution painted upon the parts. It is a powerful digester of membrane, acts in any medium, and is very tenacious to any surface with which it comes in contact. Acting also upon the outer layers of the membrane, it forms a rational and valuable link in our chain of treatment. It is much superior to any of the older combinations of pepsin, trypsin, and sulphur.

The local action of the tincture of the chloride of iron—both astringent and antiseptic—belongs to the realm of ancient therapeutics, and yet the writer believes it to be most beneficial and efficacious, particularly in those cases where there is a condition of profound anæmia. A most delightful vehicle for its administration is the syrup of pineapple—made fresh from the fruit and not from the worthless extracts sold in the shops. Besides making a palatable menstruum, it has a valuable proteolytic action upon the membrane itself, and is a powerful aid to stomachic digestion, as ably demonstrated by Professor Chittenden, of Yale, in a recent number of the *Journal of Physiology*.

Just a word in regard to the matter of prophylaxis while making these local applications. To guard against any bit of membrane being blown into the eye, it is well for the doctor or nurse to wear a pair of large goggles. A lovely woman, in perfect health, who lost her sight, and almost her life, through an accident contracted in this way, has made an impression upon the writer that will never be forgotten. Indeed, it is safer to wear a mask over the entire face. One of New York's well-known physicians lost his only daughter, a few years ago, through a piece of membrane coughed into his beard and retained there despite subsequent washing.

[1] Read before the Plainfield Medical Society, October 1, 1894.

In a word, then, we would advise as local treatment: 1. Thorough disinfection with peroxide solution, with spray or syringe, either through mouth or via the nostrils. 2. The local application of the tincture of the chloride of iron, administered in syrup of pineapple. 3. Insufflation or painting of papoid.

Constitutional Treatment.—Next and equally important is the constitutional treatment. We are dealing with a disease that at any moment may strike its fatal blow. The battle is not a long one, as in typhoid and the protracted fevers, but short, sharp, and decisive, hence the necessity for prompt action at the very start.

Alcohol, in the writer's opinion, pushed to the point of tolerance, is our strongest bulwark of defence. It dilates the superficial vessels, relieving internal congestion, its carbon forms a direct food to the body tissue, its action as a cardiac stimulant and tonic in conditions of profound toxæmia is unsurpassed. Next to alcohol, and almost equally valuable, is strychnine, preferably given hypodermatically through a small needle, the prick of which the child scarcely notices. Taken by mouth it is too apt to derange the stomach. As a pure heart tonic strychnine is equal, if not superior, to alcohol, and it is surprising to what an extent it can be pushed before we get the exaggeration of the deep reflexes, a point beyond which it is unwise to proceed. A child three to four years of age will often take one-thirtieth of a grain every four hours with marked benefit.

The local action of the tincture of the chloride of iron has already been mentioned. In cases of profound anæmia, a condition easily demonstrated by Gower's hæmaglobinometer, the constitutional effect is also valuable. Sometimes the stomach is intolerant of any form of iron. In such cases it should be promptly stopped, for in nourishment properly administered we have after all our most valuable aid—one which is too often overlooked in our zeal to obtain local antisepsis and cardiac stimulation. The soreness and pain that often accompanies each act of deglutition, the irritability and fretfulness of the patient, the utter loss of appetite, are all factors that conduce toward a starvation diet if the watchers are not constantly on the alert. Concentrated fluid nourishment — milk-punches, eggnogs, the expressed juice of meat, Rudisch's sarcopeptones, Mosquera's beef-jelly, panopeptone, and the different forms of nutritious broths should be our main reliance. To avoid the introduction into the stomach of an unnecessary amount of septic matter it is wise to administer the nourishment immediately after the local disinfection with peroxide.

The fever, as a rule, runs a low course and requires no treatment. A temperature above 103° F. can be controlled by cool sponging; under no circumstances by the exhibition of the coal tar antipyretics. Ipecac, quinine, turpeth mineral, veratrum viride, and the long list of drugs formerly held in high repute, it is best to altogether discard. Preserve the integrity of the stomach at all hazards, so that digestion and assimilation may be as perfect as possible. See that the child gets the proper amount of nourishment at stated intervals; guard the action of the heart by the judicious use of alcohol and strychnine, and we have the gist of our constitutional treatment.

Among the complications demanding our attention croup ranks *facile princeps*. In nineteen cases that fell under the writer's observation during the past year, bacteriological examinations have shown in each instance the presence of the Loeffler bacilli. They have been found present in over eighty per cent. of all cases examined by the New York Board of Health, so that we feel warranted in establishing an identity between the two diseases.

At the very first suggestion of any stenosis we would begin with calomel fumigations, burning fifteen or twenty grains of the powder every two hours. Whether it acts solely as a local antiseptic or constitutionally by diminishing the plasticity of the blood, and so decreasing the amount of fibrinous exudation, is a matter of minor import. We know that it does good if begun early in the disease and vigorously pushed. An umbrella, covered with a sheet and raised over the little one, makes a handy and convenient tent. A wash-bowl, two cross pieces of iron, a tin platter, and an alcohol lamp complete the outfit. To avoid the danger of salivating the nurse, a complication of no mean moment, the room should be thoroughly aired after each fumigation. It is surprising how often very severe cases will yield to this treatment alone, without resort to graver measures. The inhalation of medicated steam relieves the condition of dryness so often present, promotes expectoration, and acts as a local antiseptic. A solution of carbolic acid, eucalyptus, and turpentine—a favorite combination of J. Lewis Smith's—is valuable for this purpose. The addition of lime water is possibly of some assistance.

If every case of croup were given the benefit of this conservative method of treatment, thoroughly and conscientiously tried from the very start, there would be a marked improvement in our mortality statistics. But when the symptoms of stenosis grow steadily more and more pronounced, when the air no longer enters the lower lobes, as determined by the absence of vesicular murmur on auscultation, when there is marked intercostal and supra- and infra clavicular retraction with each inspiration, then we only hazard our patient's chances by delaying operative interference. We must choose between tracheotomy and intubation.

In cases complicated by intense œdema of the epiglottis and marked tonsillar enlargement, the older operation is much to be preferred. In simple uncomplicated cases of laryngeal stenosis it has to-day been almost entirely superseded by the more modern method, thanks to the genius and untiring industry of Dr. Joseph O'Dwyer.

I should say its main advantages were these: 1. It is a bloodless operation and entails a minimum amount of shock, the whole procedure taking less than a minute in the hands of a deft operator. 2. The consent of the parents can always be obtained when the very first indication presents itself. There is no delay until the patient's strength and vitality are both at such a low ebb that no interference avails. 3. The air, as it enters the lungs, is warmed by passing first through the natural channels. 4. There is no wound for reinfection; no scar to mar the beauty of later life. 5. In intubation the tube can usually be removed within a few days. In tracheotomy it is a matter of weeks before recovery is complete. 6. The tracheotomy tube requires untiring watchfulness day and night by trained attendants. Only the ordinary care is required in intubation.

On the other hand it has its disadvantages. Membrane may be dislodged and pushed down by the introduction of the tube, closing up its lower orifice. It happened to me once in one of my earlier cases. In such an emergency the expulsive power of the lungs is usually sufficient to eject both tube and membrane, as in this case, when the tube can be reinserted. To avoid any unpleasant sequelæ of such a complication, it is wise to leave the string attached to the tube, fastening the free end to the cheek with a small bit of adhesive plaster, and instructing nurse or parent to pull it out if the child suddenly chokes or becomes blue. Again, the operation is one which requires a great deal of manual skill and dexterity. If done in a bungling manner, extensive harm can be committed, and tracheotomy, under such circumstances is always to be preferred.

But the operation is no longer an experiment. Weighed in the balance, it has not been found wanting, and its most bitter opponents of former years are to-day its warmest advocates.

Diphtheritic conjunctivitis, either by direct contamination or extension through the lachrymal duct from the nares, is fortunately a rare complication. It demands most energetic and prompt treatment. Here, as in the throat, we found the neutral solution of peroxide most valuable. Applications were made to the membrane every half hour, followed by the cleansing solution of boracic

acid. Out of four cases three recovered. In the fourth, where there was also a complicating malignant scarlet fever, both corneas became involved, followed by extensive sloughing, before death supervened.

Diphtheritic paralysis occurred in only one instance, and yet it taught us a most valuable lesson, showing the danger of sudden cardiac failure. There was first the paralysis of soft palate, regurgitation of fluids through the nose, and partial disability in the lower limbs. All symptoms became markedly improved at the end of two weeks. Some few days later, the child, a "run around" of four years, grew excited while at play with some other convalescents in the same room. An attack of tachycardia suddenly developed, and death followed in ten minutes from the onset. A case under my care, here in Plainfield, while sitting upright on a vessel and straining over a constipated movement, died in very much the same way. Prolonged rest in the prone position, the positive interdiction of any active exercise long after convalescence seems established, and the faithful use of heart tonics, would seem to be the lesson taught us by these fatal cases.

Albuminuria was present in seventy-five per cent. of the cases, leaving an acute nephritis that proved fatal in only one instance, and that two months later. In all the others the kidney symptoms entirely disappeared. A rigorous fluid diet, giving the kidneys a minimum amount of work to perform, and small doses of sweet spirits of nitre where secretion was scanty, were the only measures used.

The treatment of broncho pneumonia, one of the most frequent of the fatal complications of croup, hardly falls within the province of this paper. Vigorous counter-irritation over the entire chest, with warm mustard poultice at the very outset, and the use of ammonium carbonate to promote expectoration, and at the same time stimulate the heart's action, gave us best results.

The new treatment by injections of antitoxin is as yet only an experiment. Endorsed by Koch and many of the most eminent men on the Continent, it is worthy of faithful and extended trial. And yet we must remember that the cure for tuberculosis came from the same source. To-day it is of doubtful diagnostic value only to the veterinary surgeon.

It may be of interest to note for a moment more, in detail, what has been accomplished in the treatment of our 67 cases. In the 17 cases of croup demanding intubation there were 6 recoveries, or thirty-five per cent. In two instances the children were brought to the hospital in a dying condition, and the operation was simply done for euthanasia, death following within a couple of hours after admission. Two others recovered entirely from their laryngeal stenosis, but died ten days later from a malignant complicating scarlet fever. This leaves us 13 cases where the treatment was given a thorough trial, with 6 recoveries, nearly fifty per cent. Among the other 49, not demanding operative interference, there were only four deaths, and one of these was due to the accidental swallowing of a poisonous dose of bichloride, leaving us a mortality of only 3, or six per cent. Including all the fatal croup cases there is a total mortality of only about twenty per cent., a most favorable ratio in comparison with that of other institutions. At the Emperor and Empress Frederick's Children's Hospital at Berlin, during the last three years, the mortality in 1,081 cases was 38.9 per cent. M. Roux, of the Children's Hospital in Paris, reports, during the last four years, 3,971 cases, with 2,029 deaths, a mortality of over fifty-one per cent. In this same institution, during the past few months, 448 cases have been treated with the antitoxin injections, with 109 deaths, or twenty-four and one-half per cent.

In conclusion, then, gentlemen, we would beg leave to offer the following suggestions as the epitome of the thoughts advanced in this paper.

Local Treatment.—1. Thorough disinfection with peroxide solution, rendered neutral with bicarbonate of soda. 2. Administration of freshly prepared pineapple juice, either alone or with the tincture of the chloride of iron, if a condition of anæmia be present. 3. Application of papoid, either by insufflation of powder or painting with strong solution.

Constitutional Treatment.—1. Alcohol given in heroic doses. 2. Hypodermatic injections of strychnine pushed until there is exaggeration of the deep reflexes. 3. Concentrated nutritious diet.

Realizing that our knowledge must be drawn from the wells of experience, and that we have with us to night those who have drunk long and deeply from this fountain source, the writer hopes that there may be a full and free expression of opinion, to the end that we may be better able in the future to cope with this dread disease.

THE NERVOUS SYMPTOMS OF PATIENTS SUFFERING FROM CHRONIC URETHRITIS.

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The nervous disorders that are often connected with chronic urethritis may be classed under the acquired functional nervous diseases, although they may sometimes attain such a degree of severity as to resemble the psychoses, and often lead us to consider them as something more serious than mere functional disturbances. They present certain characteristics and peculiarities, which, in connection with the underlying disorder, form, on the whole, quite a typical group of symptoms.

It is a well-established fact that irritation and disease of the genito-urinary organs are frequently the cause of manifold nervous disturbances, familiar to all practitioners, who, however, often fail to recognize the connection. Beard,[1] in his classical work on neurasthenia, writes: "Disorders of the genital apparatus are continually exciting disease in remote organs. In men a little prostatitis, or urethral or preputial irritation, not only phimosis, but even elongation, with secretion of smegma, are constantly the sole and demonstrable origin of hypochondriasis, dyspepsia, and other nervous symptoms."

Furthermore, I have but to allude to the nervous disorders coexisting with or following sexual excesses, masturbation, interrupted coitus, operations, or manipulations on the urethra, etc.

Therefore it is not surprising that a person, knowing that he has a gleet, should succumb to some nervous malady, the more so when, by allowing his mind to constantly dwell upon this fact, it should become a source of worry and all kinds of imaginary troubles. Indeed, the nervous disturbances may progress to such an extent and prominence as to become the predominant feature of the case, and the urethral disease is overlooked or regarded as one of the imaginary troubles. This latter is to be all the more regretted, inasmuch as when the true nature of the disease is recognized, the sufferer may either be completely cured by an appropriate treatment, or at least greatly improved.

Having had occasion to observe quite a large number of cases both here and in Europe, I think that the nervous complications are more frequent in this country; at least they are more conspicuous, and oftener attain a higher degree of severity. In fact it is, in my experience in this country, rather exceptional to find a person who, being aware of having a gleet for some length of time, does not betray some marked nervous symptoms, while in Europe this is very common, but by no means the rule.

I have at my disposal the records of numerous cases bearing upon the subject under consideration, but will content myself with detailing the histories of three, that

[1] A Practical Treatise on Nervous Exhaustion. New York, 1880.

will suffice to illustrate the more important features of the clinical picture.

Case I.[1]—M. D——, twenty-five years of age, sculptor, of Roumanian parentage, single. His mother always suffered from general nervousness. He was always strong and healthy previous to the gonorrhœal troubles. Is temperate in the use of tobacco and alcoholics, drinks a small amount of red wine daily; is, on the whole, a man of regular habits and in moderately easy circumstances. Denies ever having practised masturbation. No history of syphilis. Has had eight attacks of acute gonorrhœa in all, or, as he states, several of these may have been acute recurrences of the chronic trouble. The first he acquired at the age of sixteen, and the last about one year ago, the acute stage of which lasted for two months; then it subsided, and left him with the gleet. Had been treated by several doctors, who passed sounds, made local applications to the urethra, etc., without obtaining any evident amelioration.

This state of affairs has been a source of great worry, anxiety, and discouragement to him, and he has been getting more and more nervous. He feels weak, despondent, at times drowsy, has to frequently quit his work, feeling exhausted, and lie down to rest in daytime; at night has difficulty in falling to sleep, and when asleep is restless, starts and awakens often; on arising in the morning feels as if he "had been on a spree the night before," which discomfort is not a little added to by his being day after day confronted by his *goutte militaire*, which is the first thing he thinks of, and looks for in the morning. Patient has become irritable, very excitable, sensitive, and depressed in spirits; lost his interest in people and things in general. It is with reluctance and difficulty that he can accomplish any work at all. Has been obliged to give up two or three "jobs" on account of his inability to concentrate his thoughts and attention on his work; is overcome with a feeling of exhaustion and uneasiness, so that he cannot force himself to continue. Is very fond of changes. His sole desire and ambition is to get cured of the terrible disease, as he terms it, that robs him of his peace of mind, health, and all enjoyment of life; and if this cannot be effected, would rather die. He has a heavy feeling and dizziness in the head, and frequent headaches; complains of poor memory; paræsthesiæ in the form of numbness of the extremities, and creeping sensations along the inner surface of the thighs. His hands and feet often feel cool, while he frequently experiences flashes of heat to the head, and cold feelings in the back. He thinks the disease "has gone to his eyes," as things often look blurred. Complains of dyspepsia, which troubles him the most when his nervous symptoms reach their climax. The symptoms referable to the genital organs are: A continuous feeling of "weakness," a prickling sensation and sometimes numbness along and around the urethra; has lost his sexual desire to a great extent; his sexual potency is, however, fair; has involuntary and premature emissions, and when he attempts a second coitus it is either very long, or impossible. Worries greatly over loss of semen, which he notices after an erection or defecation. Has a feeling in the legs opposite the scrotum as if there was a hollow place in his flesh, which sometimes feels numb, at others over sensitive.

Status præsens, July 27, 1893.—Well nourished, strong and robust looking, skin and mucous membrane pale. Organs of the special senses normal. Sways slightly on standing with closed eyes. Fine tremor in tongue and hands. Superficial and deep reflexes lively. No objective sensory disturbances, with the exception that the spines of the dorsal vertebræ are slightly hyperæsthetic. Extremities feel cool, hands clammy. The physical examination of the thoracic and abdominal organs reveals nothing abnormal. The urine contains no albumin or sugar, but many coarse fibrous, and fine mucous threads; it is clear, and specific gravity 1.016. With the test of the two glasses, both portions of the morning urine contain threads. Sounds could be passed up to 26 (Charrière), a resistance was felt in the pars bulbosa. Examination of the prostate gland, per rectum, showed this organ to be enlarged to about twice its normal size, somewhat increased in consistence, and not painful on pressure. The microscopical examination of the "seminal loss" showed it to be composed of secretion from the prostate, mixed with a small amount of pus; there were no spermatozoa present, but I was able to demonstrate gonococci.

Treatment.—Begun on July 27, 1893. Gradual dilatation of the stricture, local applications of solutions of argent. nitric. with the Ultzmann syringe, cool sitz-baths, and 0.5 natr. salicyl. t.i.d. were ordered for the genito-urinary trouble. For the nervous disorders I prescribed a general dietetic hygienic régime, a moderate amount of exercise in the fresh air, cold spongings in the morning, abstinence from Baccho et Venere, etc., and ordered 1.0 natr. bromid. to be taken in the evening.

Under this treatment patient improved rapidly. On August 15, 1893, his stricture had been dilated up to forty-two; a five per cent. nitrate of silver solution was injected; the drop in the morning had diminished in size, and become nearly transparent; the urine contained but very few fine threads, and the nervous symptoms had markedly improved. The treatment was continued, and on September 25th the patient was entirely free from any urethral discharge; the examination of the urine revealed no evidence of disease, the threads had disappeared, and he told me that he could no more find "the morning drop," and did not lose any more semen. His nervous troubles had left him to a great extent, although he was still restless, fidgety, and anxious; but on the whole he was greatly benefited, took more interest in his work and people, felt encouraged, more hopeful, and contented with his lot. Had he continued to abstain from Baccho et Venere, and kept in the path of virtue, I am confident that he would have made a complete recovery in every respect. But alas! Two months later I learned that he had contracted a fresh gonorrhœa just before he was about to marry, and that he was again nearly mad with despondency and despair.

(The treatment of the chronic urethritis with strictures, employed in all these cases, is that which is recommended by Dr. E. Finger, of Vienna, for old cases, and which I learned in his clinic. Judging from his results and my own, I cannot speak too highly of this method of treatment as being most reliable and efficient. In brief it is as follows: If possible, the patient comes daily for treatment; if not, every two or three days. The strictures are gradually dilated by means of the Oberländer dilator, until the full dilatability of the normal urethra is reached. The gradual dilatation consists in increasing the calibre of the dilator by two numbers of the scale at every consecutive séance. The dilatations alternate with applications of argent. nitr. to the entire length of the urethra by means of the Ultzmann syringe, beginning with a half per cent. solution, and gradually increasing to a five per cent., or even ten per cent., solution. If the disease gets sluggish, the argent. nitr. solution may be changed for one of cupr. sulph., which can be used in a ten or twenty per cent. solution if necessary. After this has been used for a while, the argent. nitr. solutions are resumed, and often with a surprisingly good result. If the increasing strength of the applications and the dilatations prove too irritable, it is advisable to either not increase them, or discontinue them entirely, until they are tolerated again. The golden rule, impressed upon us by Finger, was: Never employ any method that will irritate the urethra, and set up acute symptoms or complications. He prefers this plan of treatment to the local applications through the endoscope, because the introduction of this instrument is irritative to the urethra. During the treatment the patient may take some astringent or antiseptic internally, such as acid, or

[1] Cases I. and III. are taken, with Dr. Ramon Guitéras' (chief of clinic) kind permission, from my records in his clinic at the French Hospital, of which I am in charge. Case II. was my private patient.

natr. salicyl., which is also a good prophylactic against cystitis. If the treatment fails to be efficacious in the course of several weeks, it is advisable to discontinue it, give the patient a rest for about a fortnight, and then resume it. The advantages of the Oberländer dilator (or a similar instrument) are obvious if we consider that the dilatability of the urethra *de norma* is: In the external orifice, 24, in the pars cavernosa, 30 to 35, and in the pars bulbosa 40 to 45 (Charrière). The Oberländer dilator is so constructed as to dilate these different portions correspondingly to their normal relations. Therefore the use of ordinary sounds that dilate the urethra equally in all parts is quite irrational. By this means a sufficient degree of dilatation of the bulbus, for instance, cannot be effected, which, *nota bene*, is the most frequent seat of strictures, and the patient may be treated for any length of time without being radically cured.)

The above history gives a fair example of a patient who is a familiar bugbear to most of us. When we have to treat such a subject, we find him most exacting, changeable, often irritable, taking pleasure in disconcerting and tormenting his adviser, as if he were bent upon making others share his misery. It is no wonder that such a patient wanders from doctor to doctor, or from dispensary to dispensary, telling everyone that nobody understands his case. Beginning in a general medical department, as a rule, he in turn passes to the surgical and genito urinary surgical clinic, and finally, if nobody succeeds in curing him, he is, in despair, shoved on to the neurologist.

Notwithstanding that such an individual is inclined to exaggerate his ailments, and taxes our patience to the utmost, still he is an unfortunate being, for his mental sufferings are doubtless great. He is a deserving object for our pity as well as our skill.

When such a patient presents himself for treatment, I impress upon him the importance of energetically following out the prescribed plan, and the necessity of regular attendance. I emphasize the fact that the treatment will last for two or three months. I exact a promise that, once begun, he will continue for that length of time. With what success our endeavors will be crowned, under the circumstances, depends as much upon the patient's perseverance as upon our making a correct diagnosis of the underlying urethral disorders, and applying the appropriate treatment.

Case II.—H. B——, forty-two years of age, single, Custom House employee, born in the United States; father, German; mother, English. The family history is good. Patient is a man of regular habits, comfortably situated; being the only son, his mother has perhaps spoiled him; was always inclined to be nervous; does not indulge in the alcohol, or tobacco habit; no rheumatic history. Practised masturbation, beginning at the time of puberty, for several years. Had gonorrhœa and chancroids at the age of seventeen, and the former disease again about six years ago; the acute symptoms of which soon abated under appropriate treatment, but ever since he notices in the morning that the meatus is either stuck together, or that there is a drop of yellowish or white fluid in it. After defecation, or overhearing the conversation of his colleagues, which in their leisure hours is wont to turn upon the fair sex, he either has an involuntary emission, or observes a little thick, sticky, and clear discharge from the urethra. He has nocturnal emissions every two or three weeks. On questioning him he gives an exquisite history of cerebro spinal neurasthenia, even to the minutest details, the enumeration of which, in order to avoid repetition, will be omitted. In addition to the general symptoms he presents others which are referable to the affected parts, such as itching, tingling sensations in the penis and scrotum, twitchings, and pains that start in the genital organs, radiate to the lower abdominal region, where they at times become quite intense and are increased by urinating, sexual excitement, fatigue, or micturition. He has other paræsthesiæ of these parts in the form of hyperæsthesia, and continuous irritability of the urethra. He complains of numbness of the whole genito-urinary tract, and keeps repeating: "Doctor, my privates and bladder feel as if they were dead; all the life has gone out of them; they have been weakened by self-abuse, and I don't think there is any help for me." Questioned as to his sexual potency, he answers, that as he "takes no more stock in girls," he is unable to say how this is, but that he otherwise has only very weak erections, even when the nocturnal emissions occur; he denies experiencing any sexual desire; penis always feels cold.

Patient has other marked hypochondriacal ideas and fears. Besides reproaching himself incessantly for his past sins, he pours forth a host of new complaints and ailments at every séance, as for instance: "Doctor, I have to raise such a lot of thick phlegm from my stomach that I am sure it must be diseased." On his producing this one day, I found it to be simply a minute quantity of mucous secretion, probably from the pharynx. He also worries over the smegma on the glans penis. Having heard of paresis, he is sure he is developing it; he is sure something dreadful is going to happen to end his unfortunate existence, etc. He is in constant fear of catching cold; carries a cap in his pocket which he puts on immediately on taking off his hat; in summer he almost always has an overcoat at hand, and when the weather is at all cool, he fastens his coat tight around the chest, and the sleeves around the wrists with safety-pins, for fear the cold air might get in. He eats little, although his appetite is fair, fearing it might be injurious; drinks only a small quantity of liquids, fearing to have to urinate oftener and thus increase the "funny painful feelings" in the genitals and abdomen. Some of his symptoms approach melancholia: he is extremely sensitive; imagines that everybody ridicules and dislikes him; at times secludes himself at every possible occasion, sits for hours in the same chair, and mopes over his past sins and sad condition; has morbid fears of various descriptions; according to his mother, he has had hallucinations of hearing several times, but this is quite uncertain.

Last spring he went to the Catskills to spend the summer, but he could not stand it longer than three weeks, because some friends (?) there ridiculed him and his eccentricities, and insinuated that he was fit for an asylum. He is very exacting and inquisitive with his physicians; at every visit wishes to be examined from head to foot, and when told afterward that there is no cause for so much worry, he feels relieved for the moment. He has been discharged by several doctors, rather abruptly, as a hopeless "crank" and undesirable patient, after they had tried to cure him by all manners and means.

Status præsens.—Short, rather delicate looking, fairly well nourished, weighs 110 pounds; the head looks too large for the body, but shows no deformities; the skin and mucous membranes are markedly anæmic; temporal veins prominent; arteries normal; pulse regular, soft, sixty-eight beats per minute. The physical examination is negative. On standing with closed eyes, he feels dizzy, and sways perceptibly. The deep reflexes are exaggerated. Over the middle dorsal vertebræ there is a hyperæsthetic area. No further sensory or motor disturbances. Eyes normal, the sense of smell is very acute, hearing normal. The urine is clear, slightly acid, of high color, specific gravity, 1.021; no albumin or sugar; on standing a thick sediment consisting of phosphates is deposited. Both the first and second portion of the morning urine contain finer mucous, and coarser threads. In the latter the gonococcus is present in considerable numbers. The measurement of the urethra shows two wide strictures: one in the middle of the pars pendula, and one in the pars bulbosa, of 25 and 29 calibre, respectively. The prostate gland is about the size of an English walnut, and indurated. The palpation of this organ is extremely disagreeable to the patient,—as is also any manipulation upon the urethra—for it puts him in a state of excessive nervousness and excitement.

Diagnosis.—Urethritis chronica anterior et posterior, strictures; prostatitis chronica levis, prostatorrhœa, phosphaturia; anæmia, neurasthenia gravis (hypochondriasis?).

Treatment.—Mr. B—— was sent to me on August 28, 1893. After examining him thoroughly and detecting the urethral disorder, I expressed the opinion that this was probably the main seat of his troubles, and if it could be cured the other symptoms would either disappear entirely, or be greatly ameliorated. At this statement he seemed to be satisfied and relieved, and consented to undergo the treatment I proposed. The treatment, directed against the genito-urinary disorders, was the same as in the previous case. Iron, arsenic, and strychnine were ordered as a tonic for his anæmia, and his bowels regulated by laxatives. I tried to induce him to drink more liquids in the forms of mineral waters, milk, weak tea, etc., in order to dilute the urine, which was always small in amount and concentrated; but this advice, I fear, was scarcely heeded, owing to the subjective discomfort he experienced when having to urinate frequently.

As the patient had already been "saturated" with bromides, anodynes, and narcotics by his former medical advisers, without achieving any favorable results, I refrained from any medicinal treatment of his nervous symptoms, and put him on a general hygienic régime (cool salt-water baths, a cold sponge bath mornings and evenings, a moderate amount of out-door exercise, massage, a cold compress on his head if wakeful at night, etc.), and general faradization. I also tried the mental treatment, encouraging and sympathizing with him.

This plan of treatment was followed out scrupulously and methodically by both patient and physician, and the former improved most satisfactorily. In due time his gonorrhœa was cured and his strictures dilated to the full extent of the normal urethra, which, owing to his extreme sensitiveness and nervousness, was no easy task. On November 5, 1893, I had noted: No more evidence of strictures, gleet cured, both portions of morning urine clear, no threads, or other evidence of urethritis; patient notices no more discharge of any description.

His nutrition, color, and general health had also greatly improved, he gained weight and strength steadily.

In regard to his nervous symptoms, the progress was slower, although he worried less over his genito-urinary trouble, was more hopeful, took more interest in others and his business, could sleep better, and felt encouraged by the result of the treatment; still he had a number of paræsthesiæ and morbid ideas left that he could not overcome; he still mourned over his past sins, especially over masturbation, "which must be the cause of all his troubles."

On November 11th he came to my office, complaining of rheumatic pains in the lumbar region. I suggested giving him static electricity, and the next day directed him to come to Dr. Dana's clinic at the Post-Graduate for that purpose. But, "the big machine and the sparks" proved too formidable for him, especially as the latter were—at one of my colleagues' suggestion—applied rather intensely on the nape of the neck for the purpose of alleviating his neurasthenic symptoms. The patient decided to discontinue treatment for a season, and has not returned since.

This case is very similar to the preceding; the nervous symptoms are, however, of a severer type. They show a decided tendency to hypochondriasis, or even melancholia. It will be observed that the victim of these afflictions had practised masturbation for several years. A combination of the consciousness of this failing with that of the urethral affections is most pernicious, especially in a neuropathic subject, and, as I have frequently observed, is prone to give rise to a grave group of nervous and mental symptoms. The above described mental and physical wreck is the result of such a combination.

The following history is interesting, inasmuch as the subject is a negro. He is a very intelligent, bright, and reliable man; the clearness and manner in which he relates his history, especially in reference to his nervous troubles, is quite remarkable and unique.

Case III.—C. W. P——, thirty five years of age, colored; married; works in a marble shop. He gives the following history: No syphilis. Acute gonorrhœa four years ago; has never been entirely free from the urethral discharge since. For the last two years pains and abnormal sensations referred to the region of the bladder; thinks he must have stone in the bladder, because his brother had. Itching in the back part of the urethra. Is obliged to urinate every one or two hours in daytime, and at night gets up two or three times for that purpose. States that urine is sometimes cloudy and smells bad. No discharge lately, but "the lips" are invariably glued together after sleeping for several hours. He has been treated for the urethral disorder off and on for two years, the meatus was slit, and sounds passed up to No. 30, but a radical cure was not effected.

Some of the nervous symptoms of which he complains and details in his quaint way are: A heavy, stupid, and empty feeling in the head; forgetfulness; general weariness and weakness, especially in the back, so that it is harder, and more tedious for him to get through his work. He formerly saw the bright side of things, but is now down-hearted and despondent, worrying continuously over his health generally, and especially over his "bladder trouble," which nobody seems able to cure. Poor sleep; in the morning gets up feeling unrefreshed and but little fitted to begin the day's labor. "Funny, darting feelings, starting in the neck of the bladder and extending all over the privates and stomach." The sexual functions are weak; has very little desire in this direction.

Status præsens (December 15, 1893).—Well-nourished, strong, robust man; color of mucous membrane good; no evidence of syphilis; arteries and pulse normal.

Examination.—Deep and superficial reflexes lively; sways considerably on standing with closed eyes; fine tremor in hands on extension; otherwise no objective signs of motor or sensory disturbances. The physical examination is negative. The urine is neutral, cloudy, contains threads, flakes, and a small amount of pus in both portions, no albumin or sugar. The examination of the urethra reveals a wide stricture in the bulbus, of 32 calibre. Prostate slightly enlarged.

Diagnosis.—Urethritis chron. ant. et post.; cystitis chronica (?); stricture of pars bulbosa. Neurasthenia of mild type.

Treatment.—The usual method described above was employed for the chronic urethritis with an astoundingly good result. As he also had some dyspeptic symptoms I put him on rhubarb, soda, and tincture of nux vomica, and gave him some general directions in regard to diet and hygiene.

He progressed steadily and markedly; in less than three months the genito-urinary trouble was radically cured and the nervous symptoms had entirely disappeared. This period might have been shorter, had the patient been able to come for treatment oftener than twice a week. On taking leave of me he seemed very happy, and said: "Doctor, I feel like a new man, I feel stronger and I can work first-rate again. That 'stretcher' (dilator) you have is a wonderful instrument; it has cured me entirely." Probably the psychical influence of the "wonderful instrument" aided greatly in the cure of his nervous troubles!

Remarks.—I think that all the nervous manifestations enumerated in the foregoing histories can unquestionably be classified in the great symptom-complex of neurasthenia. Morbid fears and other marked hypochondriacal symptoms are very common in neurasthenia; even be they of so severe a type as described in Case II., they fall nevertheless within its limits. The same applies to the symptoms of a tendency to melancholia.

Following Dana,[1] this case comes under the classification: "The Modified Types," "Degenerative Neurasthenia," and Dana rightly says: "This type of neurasthenia is often described as 'sexual,' or as 'primary.' It is really a manifestation of neurotic degeneracy, and may be looked upon as an abortive form of paranoia."

Considering how many sufferers from chronic urethritis are afflicted with nervous disorders, it would seem reasonable to attribute to the former an important part in the etiology of the latter. Whether the urethritis, *per se*, is the causative factor, or whether it is the mental effect of this, is difficult to determine, for there are many men suffering from gleet for years who are entirely free from any nervous disturbances until they become aware of its existence. The knowledge of this immediately brings on nervous prostration. In my estimation the psychical factor is the more powerful of the two.

On the other hand, there are men afflicted with chronic urethritis and neurasthenia, notwithstanding their ignorance of the former's existence. But if we consider how wide-spread both of these diseases are, it is not surprising that we should find both of them co-existing independently in the same individual. Nobody will deny that many of our more enlightened city inhabitants are neurasthenic, and nobody who will take the trouble to inspect the urine of his male patients will fail to be convinced of the frequency of chronic urethritis. Moreover, evidence of this can be procured indirectly by other means, such as Noeggerrath's statistics.

All authors agree in attributing to genito-urinary disorders a more or less important part in the etiology of neurasthenia. Beard considers involuntary emissions, partial or complete impotence, and irritability of the prostatic urethra as mere accompanying symptoms of increased irritability. But one must be rather sceptical in regard to such conditions, for, as I have observed, they, as well as many others, generally turn out to be the manifestations, or consequences of chronic urethritis which is the primary cause.

Finally, we have the question before us: Does chronic urethritis invariably give rise to nervous manifestations? No, I think not. I have seen men (in Europe) with normal nervous systems, who showed no evidence of neurotic disorders notwithstanding the knowledge and long duration of a chronic urethritis. Therefore it is necessary to recur to a third etiological factor, viz., a neuropathic constitution or predisposition. Dana, under neurasthenia, puts it in a very plausible way. He refers to prostatic and urethral disorders as reflex causes of neurasthenia, but presupposes a neuropathic constitution. My own observations go to corroborate this view, to which I would, however, add the psychical factor, viz., the patient's knowledge of the urethral disease, which factor is, in my opinion, the most active. Thus, the important etiological factors of the cases under consideration are: the neuropathic constitution or predisposition as predisposing, the chronic urethritis, and the patient's knowledge of its existence, as exciting causes.

In the *symptomatology* of all cases of neurasthenia connected with chronic urethritis, there is a great multiplicity and diversity of the manifestations in one sense, but in the other a striking monotony. Common to them all are the more localized nervous symptoms, directly referable to the genito-urinary apparatus, which clearly point to these parts as the seat of the disease, causing the bearer no end of worry, anxiety, and discomfort, and giving the hypochondriacal tone so prominent in these cases. These symptoms have been sufficiently enumerated and described in the foregoing histories.

The symptoms of Case I. are a little above the average degree of severity, though they are of every-day occurrence. The patient was a healthy, steady-going, reliable, and thrifty artist previous to the onset of his gleet, but afterward he was almost entirely incapacitated for any mental or physical work, unreliable, changeable, and more or less an invalid.

[1] Text-book of Nervous Diseases, New York, 1893.

Case II. shows to what extent the neurotic disturbances may progress. Here we have a perfect mental and physical wreck before us, with marked hypochondriacal symptoms and a tone of melancholia. It will be remembered that this patient had a neuropathic constitution, to begin with, and had practised masturbation for several years, which factors must not be neglected in accounting for the severity of the case.

Case III., presenting no neuropathic history and being a negro—the male sex of which race, I believe, is not so much inclined to functional nervous disorders—it is not surprising that his symptoms should be of a milder type and the course a more favorable one.

From these considerations it would appear that the severity of the neuropathic manifestations depended upon the power of resistance of the bearer's nervous system, which is the case in all functional nervous diseases.

The chief features of the cases under consideration may be summarized as follows: A history of gonorrhœic infection. Symptoms of general cerebro-spinal neurasthenia. Nervous disturbances directly referable to the genito-urinary apparatus. Prominence of the hypochondriacal symptoms, and a tendency to melancholia.

The *prognosis* of the milder and average types of neurasthenia is, as in neurasthenia from other causes, favorable; even more so, for here the seat of the trouble can be reached, which, if cured, and the physical factor being, also, thereby removed, the patient will generally make a complete recovery. If the neurotic trouble is more deeply seated and of a degenerative type, and there are other factors concurring with the urethral disorder (such as a neuropathic constitution, the consciousness of masturbation, or other previous or present vices), then their prospects of complete recovery are doubtful, although the patient may greatly improve. The troubles arising directly from the urethral affection will disappear under appropriate treatment; the other neurotic disturbances may also improve markedly, and the patient be benefited in every sense; but his morbid thoughts and imagination will take a fresh direction, new fears, worries, troubles, etc., will develop, and he will probably remain a neurasthenic subject, if nothing worse, for the rest of his days.

The plan of *treatment* of the chronic urethritis has been described in the foregoing, and some stress laid upon it, because the favorable results observed in Dr. Finger's clinic, and in my own experience, prompt me to consider it a great advance in modern science.

In the milder cases of nervous disorders, nothing more than general directions in regard to hygiene, diet, and mode of living are required. In severer cases it is advisable to resort to some sedative remedies, for the treatment of the chronic urethritis, especially in the beginning, often aggravates the nervous troubles for a while. Then the bromides are very serviceable: Natr. bromid., 1.0 in the evening, or if necessary, 0.75 t.i.d. Static electricity, or general faradization, applied cautiously, are useful if the patient can "stand it." It is also advisable to prescribe tonics, alone, or in combination with antidyspeptic remedies, if in any way indicated. The following improvement of the patient's nutrition and color, in connection with the progress achieved in the treatment of the urethral disorder, will add greatly to the psychical effect of the "cure," endowing the sufferer with more courage and hope. This latter factor is of no minor importance, for his perseverance in continuing the treatment depends to a great extent upon an appreciable improvement. Furthermore, the mental training of the patient is imperative; he must follow out the prescribed directions implicitly, and be prevailed upon to entirely change his mode of life. An appreciation of the subsequent improvement will be more than sufficient to deter him from falling back into his former habits.

Last, but not least, the physician must show much kindness, consideration, patience, and interest for the sufferer. This class of patients like nothing better than to be carefully and repeatedly examined, assured that there is no

grave disorder, and that they are progressing satisfactorily. They always feel grateful for such attentions at the hands of the doctor, and even if the effect be but psychical and momentary, it is, nevertheless, deserving of being practised.

23 West Fifty-third Street.

NOTES ON APPENDICITIS.[1]

By EGBERT H. GRANDIN, M.D.,

new york.

President of the Medical Society of the County of New York; Gynecologist to the French Hospital, etc.

When invited to read a paper before the Queens County Medical Society, I accepted the honor with all the more pleasure because it enabled me to introduce for discussion a topic which, to judge from the number of instances I have seen in consultation in this neighborhood, will elicit most valuable information from your Fellows. Notwithstanding the relatively large experience which it has fallen to my lot to have with appendicitis in the rôle of consultant, I am about as much in the dark in regard to the symptomatology and treatment as I was when the surgery of to-day replaced the medicine of yesterday in the management of this affection. It is to the general practitioner, of which this body is largely composed, that I look for the elucidation of a number of obscure points, and I feel that my visit here will result in the personal acquisition of greater information that I can give you. The remarks I have to make are suggestive, although founded on much experience.

I have come to the conclusion that there is no absolute group of symptoms which points to appendicitis, and that there is an absolute group of symptoms which calls for surgical interference. I do not believe that every case of appendicitis calls for the knife, even though palliative treatment never effects cure in an anatomical sense. I am firmly convinced that a trilogy of symptoms, which I proceed to dwell upon, stamps a type of the disease —called infectious appendicitis—as demanding surgery as immediate as possible.

A constant symptom present in appendicitis is pain. This pain at the outset may be located at any point of the abdomen; it is often sub umbilical; it is frequently diffuse abdominal. It is described as being acute and agonizing, and sooner or later the maximum seat of intensity lies over the ileo-cæcal valve. This pain, however, is not alone of diagnostic value, since it is an associate of other intra-abdominal lesions besides appendicitis. Its localization awakens our suspicion that the cause is near the cæcum; its presence, however, never certifies absolutely to appendicitis. A mere impaction at the cæcum may give as much pain. The decrease in pain, or its disappearance, on the other hand, may, as I will show later, be a bad omen.

High thermometric range, associated with great abdominal pain, both factors being continuous, is rather characteristic of instances which recover symptomatically without operation than the reverse. Frequently these instances terminate in local abscess, on the incision of which the symptoms subside. It is the instances where, notwithstanding the temperature subsides, the pulse yet remains rapid, which always should cause anxiety, and which nearly uniformly demand surgical interference. The fall in temperature, the subsidence of the pain, the relatively high pulse-rate, point to beginning septic infection, and if the focus be not removed general peritonitis sets in of a type uniformly fatal. Decrease or absence of pain, and flat instead of tympanitic abdomen, mean generally perforation of the septic appendix. The aim of surgery in this region is to forestall perforation and the resulting peritonitis. The gist of my argument, then, is that I am more alarmed by the subacute nature of the symptoms thirty-six hours or so after the initial attack than I am by the maintenance of acute symptoms. In the latter event apparent cure will often follow on purely medical measures; in the former instance incision, as soon as may be, frequently offers the sole hope of saving life.

It is above all important, in cases where the diagnosis of appendicitis is suggested by the symptoms, to avoid masking these latter through the administration of opium. If the stomach be tolerant, it is desirable to secure free catharsis in the early stage, since a loaded cæcum not alone may simulate appendicitis but intensify its symptomatology. High rectal enemata of ox-gall, turpentine, glycerin, and saturated solution of Epsom salts will frequently be of service while awaiting the action of laxatives given by the mouth. Hypodermatic injections of a saturated solution of sulphate of magnesium, given deep in the nates (3 j. doses half hourly) have also repeatedly in my hands had a purgative action. For the relief of the pain the ice bag answers better than the poultice, being a local anæsthetic, and at the same time lowering the temperature without affecting the heart, as all the coal-tar series of antipyretics may. If, notwithstanding these remedial measures, at the end of thirty-six hours the symptoms show no signs of abating, or else the abatement is in the unfavorable direction I have noted above (fall in temperature, relatively rapid pulse, flattening belly), then, as the result of my experience, I feel that the time has come for surgery. If we wait for the formation of a distinct tumor, general sepsis may set in before operation can be performed; if we wait until there is evidence of beginning perforation, operation will prove nugatory.

In my operative experience, which includes thirty-two cases, I have met every form of complication—the gangrenous appendix, the appendix full of pus on the point of rupture, the appendix which had perforated into the general peritoneal cavity causing purulent peritonitis, the appendix simply congested and denuded of its peritoneal coating (the so-called catarrhal appendix), the perityphlitic abscess. In this neighborhood I have seen 18 cases of appendicitis; of this number I operated upon 10, with a loss of 3. In 1 case operation was refused, and the patient died within forty hours. The remaining 7 cases recovered without operation. The 3 fatal cases following operation were all instances of general peritonitis, a type which yields an almost absolute death-rate.

Through the courtesy of your colleague, Dr. R. F. McFarlane, I am able to show you to-day three patients on whom I have recently operated for appendicitis. The little girl's initial attack dated back about forty hours. The rapid pulse, the relatively low temperature, the diminishing pain pointed to perforation or to beginning septic infection. Operation was advised and accepted. On section I found a gangrenous, perforated appendix and active peritonitis. Her recovery is due to the unremitting watchfulness of Dr. McFarlane. As a rule, instances of this nature die, no matter what the treatment. In a case of the like nature, seen recently in New York City, with Drs. Smith and Warner, operation was performed in the presence of a temperature of 99° F., pulse of 120, flat belly, and no pain. The same condition of affairs was found; the child lived ten days, finally succumbing to septic infection, characterized chiefly by absolute intestinal paresis.

In the little boy the symptoms were more acute than in the girl. The facies, however, had that anxious, drawn, ashy look suggestive of septicæmia. I opened in the usual locality; behind the cæcum I found the firmly adherent appendix yielding fluctuation. There was no peritonitis, and to avoid infection of the cavity I opened behind, found a posterior rupture with pus, and counter-drained after asepticizing the cavity posteriorly.

This man was operated upon in the quiescent stage. He had had repeated attacks and had grown weary of the interference with his business. I found omentum as thick as the thumb, which I tied off; underneath this an adherent cæcum which I separated; below this the ad-

[1] Read by invitation at the Semi-annual Meeting of the Medical Society of the County of Queens, October 30, 1894.

herent, convoluted appendix, which I removed. I drained him for thirty-six hours, and then sewed him up carefully. Contrary to the advice of Dr. McFarlane, he left his bed in twelve days and refused to wear a truss. His contumacy resulted in this hernia.

Here are a half dozen appendices, which I present as samples of the kind I have removed. You notice that they are large and distorted, perforated at one or more places, denuded of epithelium. All of these, and such has been the necessity I have ever been under, have required a liberal incision in order to free and remove them with safety to the patient and without unnecessarily infecting the peritoneal cavity. In the majority of my operations I have utilized the Trendelenburg posture, which has enabled me to see what I was doing and to protect to better advantage the peritoneal cavity. This position you may improvise at any time by tying an ordinary hard bottom chair on a table, so as to form an inclined plane. I have further, in all pus cases, irrigated freely with hot one per cent. salt solution and with full-strength peroxide of hydrogen, neither of which act as irritants, as bichloride does. Further still, whenever feasible, I have counterdrained, and in large peri-appendicital abscesses I have avoided digging up the appendix, a procedure which can only result in breaking down nature's protecting wall of adhesions and in thus infecting the general peritoneal cavity.

Such are the discursory thoughts I would offer for discussion. The principle which mainly guides me in selecting surgery in these cases is the feeling that it is preferable to perform an aseptic exploratory section and be proved wrong in diagnosis, than to wait on nature until an operation is forced upon me after perforation and in the presence of peritonitis.

36 East Fifty-eighth Street.

THE INDIAN WOMAN IN LABOR.

By GUY C. M. GODFREY, M.D.

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As the Indians are very reticent about their child-births facts in the matter are hard to obtain, and my thanks are due to Dr. F. H. Welty, the physician to the Shoshone Agency in Wyoming, for his invaluable aid in preparing this article.

The Indians at this agency are Arapahoes and Shoshones, and it is about them that I write. The Shoshone women are rather short and heavy set, with broad pelves. Their temperament is lymphatic. The Arapahoe women, on the contrary, are tall and slender, with fine figures and broad pelves. They are of a bilious temperament. In both tribes the women are stronger than the men, on account of the enormous amount of work they do. As the habits of any people have a direct bearing on their health, a few words in regard to the customs of the Indians will not be inappropriate.

The women are very industrious and perform nearly all of the manual labor done in the village, including chopping wood, carrying water, cooking, etc. They also do the sewing and bead work. Their recreation is gambling. They, as well as the men, are filthy. As regards virtue, conflicting reports are heard, some claiming that the prairie Indians (Arapahoes, Cheyennes, and Sioux) are virtuous, others claim that no Indians are virtuous. Several years ago the Shoshones had a custom of cutting off the tip of the nose of any woman caught in adultery. After the woman's nose was clipped, she was considered a harlot of the tribe. When a woman walks by herself she is not considered virtuous, and is fair game for any buck. Therefore two women generally keep together. A custom prevails among the Arapahoes of eight or ten young men lying in wait for a solitary female, and when one appears in view they seize and ravish her. The girls begin menstruating when twelve or thirteen years of age, and continue until they are forty or forty-five. They are very regular. The half-breeds and Shoshones sometimes suffer from suppression of the menses, but the Arapahoe women are never known to have any menstrual disorders. During menstruation a woman retires alone to a small wickyup or tepee, and remains there until the flow has ceased. Whether this custom is compulsory or voluntary is not known. The child-bearing age is between thirteen and forty-five. The average number of births per woman is about ten or twelve. As a rule they marry quite young, because the constant drudgery of their lives breaks them down, and a squaw is often a wrinkled hag at the age of forty. The bucks, on the contrary, often keep their age well. A young man takes a wife and when, after a certain number of years, she loses the bloom of youth, he takes another and so on. As a rule the squaws are quite healthy, with the exception of scrofulous subjects, scrofula being the most common disease among them. Cancer is never found among these Indians. During pregnancy there is no morning sickness, although at other times the Indians often have dyspepsia from their gormandizing and monotonous diet. The pregnant woman is not constipated any more than at other times. As a rule they have no sickness whatever while they are with child. During labor the woman lies on her back supported in a semi-recumbent position by a head-rest made of sticks covered with skin or cloth. This rest is wedge shaped, about three feet long and two feet high at the base. It is placed on the bed usually occupied by the patient. The men are all required to leave, and the patient is only attended by two or three old women who live in neighboring tepees. They have no regular midwives and rarely apply to a white physician for any assistance during labor. The old women remove all of the clothing below the waist and stay by the patient's side during delivery. In case the latter is slow or difficult they occasionally knead the abdomen with their hands. If the labor is unusually difficult two of the women hold a stick between them at a height of about a foot from the ground and across this the patient is required to lie with the abdomen downward. This, of course, stimulates the contractions of the womb and causes increased abdominal pressure from the patient's weight. The above constitute all the resources of the old women, and if they fail, the "tona-hay-hay," or medicine-man, is called in. He is a very important personage in the tribe, and has the full confidence of all. His art consists in making a big "pow wow," calling on the Great Spirit and rattling his "medicine-box." He, of course, does no good, but as Indian labors nearly always terminate successfully by natural methods, he gets the credit. The delivery, as a rule, is short and easy. It seldom lasts more than three or four hours. The patients seem to suffer much less than white or negro women. The vertex usually presents. Abnormal presentations, like pelvic malformations, are very rare. Only one case has been reported at this agency during the last six years. Indians are very unwilling to talk about such matters, but I conclude, from the meagre scientific information obtained, that it was a transverse presentation. This case lasted four days. The old women kneaded the abdomen with their hands and hung the patient across the stick. These two methods having failed, the medicine-man was called in. He danced, shouted, and rattled his medicine-box for two days, and as neither spontaneous version nor evolution occurred, the patient died from exhaustion on the fourth day. No autopsy could be obtained, and the mother was buried with the child undelivered. No white physician was called, because the Indians do not know the extent of science and art in obstetrics. The Indians know nothing of artificial delivery, consequently it is never attempted. Neither placenta prævia nor tumors ever occur to complicate delivery. I have never heard of a prolapse of the cord occurring in labor, although I believe it does rarely. Retention of the placenta is not unusual, and for this the white physician is generally called. When the doctor arrives he finds that the med-

icine man has failed, the old women make no attempts to extract the placenta beyond tying the umbilical cord to the patient's leg. They do this, they say, to prevent the cord from slipping up. The doctor then explains that if Credé's method fails he will introduce his hand and remove the after-birth. This he does after taking the proper antiseptic precautions. Whereupon the women pat him on the breast and exclaim "ohoh ohoh!" which means "bless you." When he emerges from the tent the bucks shake hands with him and, solemnly pointing upward, say: "Heap big medicine man!"

Multiple pregnancy is unknown among full-blooded Indians. Only two cases have been reported at this agency during the past six years, and in each case the father was a negro and the mother an Arapahoe. In each case the children consisted of a boy and a girl. Triplets never occurred. The duration of the puerperal period is usually only a few hours. At the end of that time the patient is up and doing her usual work. In scrofulous subjects the period sometimes lasts longer, even extending to a week's duration. In one case which recently came under Dr. Welty's observation, the patient, being a scrofulous woman, was unable to suckle her child.

Puerperal eclampsia is unknown. Puerperal septicæmia is very rare, only one case having occurred here within the last five years. This case was also attended by Dr. Welty, who says that it was caused by a decomposing retained placenta. The patient, a syphilitic, had by that time contracted puerperal septicæmia from which she died ten days after delivery. Mammary abscesses are quite frequent, and are caused by exposure and the filthy habits of the patients. The maternal mortality is very small, only two deaths having occurred here in the past six years—one from exhaustion and the other from septicæmia, as reported in the two cases mentioned above.

The fœtal mortality is very small, only two children having died during the past six years. Abortions are rare among full blooded Indians, but are rather common among half breeds. An abortion is generally the result of a fall, kick, or blow. The Indians have no special knowledge of its etiology or treatment. The foregoing facts were obtained with great difficulty, as very few of the Indian women speak English. They are backward about talking through an interpreter, because they are very, very much averse to giving any man any knowledge of their sexual troubles. Therefore I offer this article, not as an ultra-scientific study in obstetrics, but as an interesting collection of facts concerning the "noble red man's spouse."

VAGINAL HYSTERECTOMY BY ENUCLEATION WITHOUT LIGATURE OR CLAMP.

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NEW YORK.

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The possibility of enucleating the uterus per vaginam without the use of a ligature or clamp, is a recorded fact in surgical literature, dating from 1822. So that, in contemplating this apparently new procedure, we are faced at once with the stubborn fact that there is nothing new under the sun.

It was accomplished for the first time, as far as we know, by a surgeon named Sauter, of Constanz, Germany, in the year 1820. The feat becomes the more extraordinary when we consider that he did it without the use of an anæsthetic or a speculum. The operation was done for cancer, the woman was bound fast to the edge of the bed, and the tissues were severed by scissors, the points of which were guided by the fingers. The account is extremely interesting, and is quoted in extenso in a work entitled "A Handbook of Surgery," by Chelius, of Heidelberg, and translated into English by South, of London, under the title of "A System of Surgery." The translation was published by Lea & Blanchard, Philadelphia, 1847. Although Sauter's patient recovered without serious hemorrhage or other accident, no one seems to have followed in his footsteps till recently, when the operation was revived by Pratt, of Chicago.

What the benefits or advantages of this procedure may prove to be, I am at present not prepared to state. But every new fact or principle established in surgery, as in every other branch of science, may contain in itself possibilities of far wider significance than the present moment can imply. At present, however, we know that the tightening of ligatures on nerve-fibres produces a certain amount of shock, and the placing of these ligatures requires a certain amount of time. These are important factors to the patient in every operation of this kind. By this method they can both be eliminated.

The secret of avoiding hemorrhage in this procedure is to adhere so closely to the uterine wall in the dissection, that the anastomosis between the uterine and ovarian arteries is avoided, and only the small branches are severed as they penetrate the uterus.

The opportunity of trying this method presented itself to me recently, and I put it to the test. The patient was an Irish woman, forty-six years of age, who had been suffering for the past seven years with complete procidentia uteri and all its train of torture. My hope was not only to relieve the tissues from the drag of the heavy uterus, but to secure the end of the vagina to the broad ligaments at a point sufficiently high to make them hold up the vaginal wall and bladder.

The field of operation having been made aseptic, I made a circular incision around the cervix through the vaginal wall with a scalpel, and pushed the tissue away from the cervix all around with the handle of the knife. It occurred to me that Thomas's spoon saw would be a good instrument for this dull dissection from this point on, and I found it to work admirably, enabling me to adhere very closely to the uterus, and to separate the tissue with ease and despatch. Upon reaching the peritoneum in Douglas's pouch I snipped it with the scissors, and tore it right and left with my finger.

To prevent the peritoneum separating from the vagina too much at this point, also as a preliminary step in closing the upper end of the vagina, I now passed a strong catgut suture through the wall of the vagina entering the needle on the peritoneal side and passing it straight through into the vagina, and then back again, thus leaving the loop on the vaginal side. The two ends were then caught in a clamp forceps and left hanging out of the vagina. Continuing the dull dissection with the spoon saw, I separated the bladder from the uterus, even tearing through the peritoneum above it and enlarging the opening to either side with my finger.

Although I had been in momentary expectation of seeing a spurting artery and was ready at any moment to apply a ligature, no arterial hemorrhage occurred. I therefore pushed on with the spoon saw, and soon had the satisfaction of seeing the two horns of the uterus sustained by nothing except the round ligaments. Before severing these I passed through the upper part of each broad ligament, high up on either side and transfixing the round ligament, a single strand of braided silk, letting the two ends of each hang out of the vagina without having tied any knot. The round ligaments were then cut away at either horn and the uterus delivered, thus demonstrating that the uterus can be enucleated without sufficient hemorrhage to demand either ligature or clamp.

To complete the occlusion of the upper end of the vagina, one strand of the catgut suture already placed was rethreaded and passed through the anterior vaginal wall, entering it on the peritoneal surface and passing it back as formerly in the posterior wall. These two ends of the catgut were now tied together, thus bringing peritoneal

surface in contact with peritoneal surface, and turning all raw tissue into the vagina.

The broad ligaments are now drawn well down into the vagina by the silk sutures previously passed, and securely tied together across the upper part of the vagina. A light packing of iodoform gauze completed the operation. The entire time consumed was a few seconds less than thirty minutes, much less time than it has ever taken before.

The operation was done at the New York Skin and Cancer Hospital, October 12, 1894, and I believe it is the first time the operation has ever been done in New York.

The patient had a slight hemorrhage three hours after the operation, but it was found to proceed from the vaginal wall and was controlled by a firm tampon of gauze. Aside from that, recovery has been uninterrupted.

22 East Thirty-fifth Street.

Progress of Medical Science.

Skin Diseases and Visceral Affections.—According to the *Medical Bulletin* for June (see also *Deutsche Medical Zeitung*), Kaposi spoke at the Vienna Medical Club of a misapprehension that prevails concerning Hebra and his school, to the effect that they look upon cutaneous diseases as simply external abnormal conditions having no relation to alteration of internal organs. This is not true of Hebra and his followers. While opposed to an uncritical assumption that such relationship exists, such conceptions obscuring comprehension and exerting a pernicious influence on prognosis and therapy, Hebra continually recognized such connection and turned the fact to practical account in treatment. Acne may be taken to illustrate the case in point. It is asserted that this disorder depends upon digestive disturbances. Yet when a disease can be explained in its totality, in its clinical and anatomical course, by demonstrable associations, a search for ulterior causes is unnecessary. Acne generally occurs at the age of puberty, when an active physiological process is going on in the follicles of the skin, though it may originate later in life. There is usually a depressed condition of nutrition, atony of the tissues involving the glands. The ducts of the glands are not properly contracted, giving rise to comedones and acne. The keratinization of the skin is also abnormal, and often alterations occur in the functions of the sudoriparous glands. There is not infrequently hyperidrosis. In this class also belongs acne cacheticorum, which itself depends upon lowered nutrition, though it may also be due to psychical influence. In acne varioliformis, more common in men than women, Kaposi spoke of excellent results from Carlsbad water, while local treatment is usually of small benefit. Pure hyperidrosis of the palms and soles arises during youth; in other instances it may come on abruptly and continue for years, disabling the patient for work. Here, again, general depression of nutrition is a cause. There is weakened action of the heart, reduced vascular tonicity, and the hands are generally cyanotic. As nutrition improves, there is apt to be a change for the better in the hyperidrosis. A similar result takes place in that affection recently known as erythromelalgia and characterized by the appearance of a persistent patch of congestion, often on the sole of the foot, attended with swelling and pain. Acne rosacea is linked with nutritive disturbances, sometimes with digestive errors, sometimes with uterine disturbances. Urticaria has been supposed to be due to changes in the alimentary tract; yet the mere sight of the specially harmful food will bring it on in some persons. Acute circumscribed œdema is nothing more than a giant urticaria due to vascular spasm.

In eczema, especially recurrent eczema, there is a relation between the skin disease and internal organs. Furunculosis, often referred by mistake to glycosuria, occurs in persons who suffer from eczema. Boils are not common in diabetes; but dermatitis diabetica is not unusual. How great the caution to be exercised in the etiology of skin diseases is illustrated by elephantiasis arabum tropica, certainly produced by the filaria sanguinis. Yet in a typical case observed by Kaposi, no trace of filariæ could be found. To depressed conditions, lupus erythematosus may also be ascribed. But it is wrong to consider pruritus senilis as due to digestive troubles; there is usually atrophy of the skin, with irritation of the nerves. Another form, developing in middle life, is accompanied by albuminuria and glycosuria. Pruritus universalis is a frequent accompaniment of pregnancy, of disease of the genital tract, and may also depend exclusively upon psychical causes. Impetigo herpetiformis also arises in pregnancy. Kaposi has seen seventeen fatal cases under such circumstances. Erythema, especially erythema nodosum, and purpura are the result of infection. Yet many cases exist that are dependent upon uterine or ovarian abnormities, and disappear when these are remedied.

The Treatment of Ophthalmia Neonatorum.—Kalt recommends irrigation of the eye with a 1 to 5,000 solution of potassium permanganate introduced through a small funnel, one end of which is placed between the eyelids, and the other connected with the bottle containing the fluid, which should be placed about a foot above the patient's head. The irrigations should be made twice a day, and two quarts of the fluid should be used at each time. If the disease is attended with serious or extensive trophic changes in the cornea, the irrigations must be used more frequently, say four times a day, and gradually lessened as the inflammation disappears. [At a recent meeting of the Ophthalmological Section of the New York Academy of Medicine, this plan of treatment was favorably commented on by Dr. H. Knapp, who had seen its application by Kalt.]

Toxic Effects of Thyroid Feeding.—Bêclère presented to the Medical Society of the Hospitals, Paris, a patient illustrating the cure of myxœdema by thyroid therapy. During the course of her treatment she accidentally took a large quantity of thyroid gland, ninety-two grammes in eleven days. At the end of this time she had developed such symptoms as tachycardia, pyrexia, insomnia, tremor of the extremities, exophthalmia, polyuria, albuminuria, and glycosuria, in fact a complete picture of Basedow's disease. The writer, therefore, concludes that the latter disease is due to a hypersecretion of the thyroid gland which may be caused in more ways than one. He thinks that Basedow's disease should no longer be classed as one of the neuroses, but as auto-toxic from an etiological point of view.

Gastropexy.—Duret presented to the Paris Academy of Medicine a woman on whom gastropexy had been performed after all other measures had failed to relieve a severe enteroptosis with dilatation and descent of the stomach into the infra-umbilical region. He is of the opinion that in cases of prolapse of the stomach of long standing gastropexy is an efficient method of treatment, both with reference to fixation of the stomach and cessation of the majority of the morbid symptoms.

Acute Pancreatitis.—Dr. Paul contributed to the Clinical Society of London the history of a case of acute pancreatitis in which the prominent symptoms were the sudden onset of pain, which was colicky in its nature and of short duration, constipation, and some vomiting. On examination, slight distention of abdomen, pulse and temperature somewhat increased. After the action of a simple enema the patient suddenly collapsed, the temperature rose to 104° F., and death followed speedily. The urine passed just before death contained a large amount of albumin, and granular and hyaline casts. Post-mortem examination showed an acute hemorrhagic and parenchymatous pancreatitis. The remaining organs were healthy except a cloudy swelling of the kidneys.

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CHLORIDE OF CALCIUM IN THE TREATMENT OF ACUTE PNEUMONIA.

IN 1893, Dr. A. Crombie called attention to the supposed value of chloride of calcium in the treatment of pneumonia (*Indian Medical Gazette*, January 18). Dr. D. M. Moir, of the Indian Medical Service, confirms this opinion of its value in an article in *The Practitioner* of November, 1894. Dr. Crombie believed that he showed that in lobar pneumonia (1) chloride of calcium reduces the temperature and keeps it within safe or normal limits, in spite of the continuance of physical signs; (2) that there is a tendency for the morbid process to be arrested at whatever stage the drug is given in efficient doses, and that the course of the disease is thus shortened or rendered milder; (3) that there is a singular freedom from all anxiety, distress, and danger, a freedom not usually associated with continuous high temperatures; (4) and that there is a corresponding reduction in mortality.

Dr. Moir reports two cases in which the symptoms were alleviated by the administration of this drug. He gave it in doses of from sixty to ninety grains daily (ten or fifteen grains every four hours).

Many drugs have a reputed value in pneumonia, but none are yet accepted as in any sense standard remedies in the disease.

The evidence in favor of chloride of calcium is sufficient to demand for it some attention, and we can only trust that further experience will show that the drug is undoubtedly useful.

ACUTE ARTICULAR RHEUMATISM AS A GERM DISEASE.

BIRSCH-HIRSCHFELD, in 1888, reported five cases of acute articular rheumatism in which he discovered streptococci and staphylococci in the articulations and cardiac valves.

Bouchard and Charin, in 1891, reported that they had found the staphylococcus albus many times in the synovial secretions in subacute and chronic articular rheumatism.

Triboulet, during the same year, found the articular fluid sterile in a case of rheumatism with chorea, but on death the pericardial fluid and the blood of the heart and vena cava was found to contain the staphylococcus albus.

Sahli, in 1892, in a case of acute rheumatism with pleurisy and pericarditis, found that the synovial fluid of the knee contained microbes resembling the staphylococcus albus.

Dr. J. Sacaze (*Archives Générales de Médicine*, November, 1894) reports the results of his investigations in the same line. Dr. Sacaze made, however, bacteriological examinations of what he calls the "points of entry" of the rheumatic infection. In one case, a man had a wound on the foot followed by acute articular rheumatism with relapse. In the fluids of the knee-joint he found pure cultures of the staphylococcus albus. In three other cases the patients had an acute tonsillitis followed by rheumatism, there also the secretions of the tonsils were examined with the result of finding staphylococci.

He concludes that very often in acute rheumatism there is a local lesion which precedes the rheumatic outbreak. It is through this passage that the pathogenic microbes enter the system and the staphylococci seem to be often the infecting agents.

The history of gonorrhœal and other septic rheumatisms supports the view that acute inflammatory rheumatism must be classed among the microbic diseases.

THE CURSE OF KISSING.

PROPERLY applied, both as to time and place, the participators being mutually agreeable and fairly healthy, there is little to be said against the kiss, practised in moderation. When, however, one party to the transaction is an infant, not yet up in self-defence, or a maiden whose resistance is of no avail against the physically stronger aggressor, or an inanimate body prepared for burial, we claim the right to champion their cause against the reckless kisser. We have little to say concerning that form of disease known as kissing-fever, of which instances are now and then reported, especially from smaller towns. The over-affectionate man, who lurks in lonely places and pounces with his osculations upon unprotected women, without distinction as to size, age, or color, belongs in the same mentally unbalanced class as the despoiler of school girl tresses, the destroyer of white lawn dresses, the ink-thrower, the hugger—and when still more depraved—the ripper.

We leave him to the officers of the law and the alienists, provided an outraged brother, father, or husband has not already attended to his case "out of court." The child-kisser by habit really does more harm than the lady-kisser by disease, for while the latter shocks an occasional belated female on a lonely road, the former is constantly teaching the children with whom he comes in contact that it is not wrong to kiss comparative strangers, and a most dangerous, if not disgusting, habit is fostered.

Scientists have never yet discovered why it is that syphilitics, tuberculous subjects, persons with very bad teeth, and tobacco chewers, are the greatest kissers of infant and youthful humanity, and invariably implant their token of affection directly upon the lips. Such, however, is the fact, as any careful observer may discover for himself.

If there were any possibility of this reaching those who alone could answer, we would ask why the maiden aunt, who never was very fond of the children at best, insists upon coming into the room and kissing them as soon as they are down with the scarlet fever, diphtheria, measles,

or the mumps? Why must she, who "never kissed a living man" and doesn't believe in kissing anyway, press her lips to those of some cold corpse? This death-kiss may well be called a sanitary sin, and unless we, as physicians, continually discountenance it, as well as put our face against sick-bed kissing, we must hold ourselves more than equally responsible, for we know the dangers better than they.

Sanitarians have tried many times to introduce songs among the people tending to offset and counteract that very pernicious one which begins: "There is no harm in kissing," but they have never become popular.

Must we, then, leave the youngsters in happy ignorance of mouth hygiene? Can we keep their innocent minds free from thoughts of the bacilli swarming beyond the ruby lips? Should we ever neglect an opportunity to strike at the mouth which bears a mucous patch or where lurks the poison of phthisis or to defend the defenceless babe from the onslaughts of the male and female kisser.

SPECIALISM AND MEDICAL PRACTICE IN TEXAS.

Dr. R. P. Talley gives the following list of modern specialists (*Texas Medical Journal*) and makes some interesting comments upon them. There are, he says:

"1. The eye, ear, nose and throat *specialist*. 2. The gynecologist *specialist*. 3. The railway surgeon *specialist*. 4. Whiskey, opium, etc., *specialist*. 5. Dentist, or oral surgeon *specialist*. 6. Orificial surgeon *specialist*. 7. The Arkansas Hot Spring *specialist*. 8. The self-constituted midwives, and on down the line to the street medicine man, the Christian science doctors, the pile doctors, the Keeleys, etc., about whom and which I shall have nothing to say on this occasion."

The doctor speaks kindly of what he calls real specialists who are masters of their work and confine themselves to it. But he has a grievance against the railway specialist because (and Dr. Talley seems fond of enumeration):

"1. These surgeons are backed by a powerful financial corporation.

"2. They get a handsome salary for a fraction of their professional time.

"3. They are not required to give their whole time and energies to their specialty.

"4. Out of all they get a big 'ad.' by which they step from the practice from the employees to their families and friends, as well as to the practice for the employer, not allowed under the rules of the Hospital Association.

"This is all very nice and desirable for the railroad doctors, but I think it is a devil of a hardship on the 'other fellows.'"

Dr. Talley does not like the Hot Springs specialist. His virtues, he says, "are advertised on every telegraph-pole, hog-pen, etc., throughout the entire country. Unless we can make people understand that water can be made as hot in Texas as it can in Arkansas, our patients will continue to slip out and pay ten times as much for their troubles as if they would try in any sort of good faith their family physicians."

Incidentally we are given a painful picture of the over-crowding of the medical profession of Texas. In the town of Temper, where the doctor, who is President of the Austin District Medical Society, resides, there are twenty-two doctors to something less than 6,000 inhabitants, and in the country around there are twenty-four more within ten miles. "Some authority," he adds, "has estimated that in the army, in time of war, one physician can serve five hundred soldiers, and that in civil life one thousand and five hundred patrons are required to support one general practitioner. According to this estimate, in my town we have eighteen out of twenty-two doctors to spare, and if we cannot get rid of this excess, somebody will be hurt." "We presume this has as much reference to the patients as to the doctors." "This excess in number leads to all manner of 'sharp work' to get practice. Such a crowded population of doctors reminds me of a crowded population of poor people, where we find hot-beds of all sorts of pernicious diseases, moral as well as physical. Why, in too many localities our doctors are crowded, as well as illy bred as doctors, until the slime of local rivalry rises mountain high. If some local brother steps a little aside from what some other local brother thinks is ethical, he forthwith gets all sorts of infamy heaped upon his professional head. Who ever heard of two or three doctors getting together, singing a song and praying for some professional sinner, who had perhaps even sinned without knowing it? There is only one occasion when doctors may get together and sing and pray for one another, to wit: When one dies they can sometimes meet around his grave, and say amen, and then pass resolutions of condolence with a prayerful and perfect unanimity."

We wonder why the doctors of Texas have been working so hard to establish a medical college if their country is so well supplied. The causes of the over-supply in that State, as President Talley should know, are two-fold: one is the cheapness of medical education; the other the ignorance of the people and their willingness to accept anyone for a doctor if he can make a presentable appearance at the bedside, and shrug his broadly expressive shoulders at the other fellow.

NOT ALL DIE YOUNG.

One hears so much depressing talk about the life of a physician not conducing to longevity that it is cheering to note exceptions to the rule.

The following, cut from an exchange, is doubly interesting because we believe we can beat it.

"Oldest Physician in the Country.—Since the recent death of Dr. James Kitchen, of Philadelphia, Dr. Hiram Corson, of Montgomery County, Pa., is declared by Philadelphia papers to be the oldest physician in the United States who has been in continuous practice. He will be ninety years old next October, and has been in active practice ever since 1827. He is still in excellent health, with astonishing preservation of his physical and mental powers. Dr. Corson is now writing his personal recollections of the anti-slavery movement, in which he took an active part, having assisted many a fugitive slave to escape by the 'underground railroad.'"

Our entry for the long distance championship is Dr. Hull Allen, of Milford, Conn., born May 16, 1798, and

consequently in his ninety-seventh year. He was licensed to practise medicine at Newark, N. J., in 1821, and began in the same year at Sparta, N. J., subsequently removing to Milford, Conn., where he continued in active practice till 1870. Since then he says "he doesn't go out much nights," but until recently he has continued to give advice to those who call upon him at his house.

Dr. Allen has always enjoyed excellent health, and is to-day remarkably bright and active for one so near the hundred-mile post. May he be an example for many years yet to those who grieve because ministers and lawyers reach a riper age than we.

THE ANNUAL REPORT OF THE SURGEON-GENERAL OF THE ARMY.

THE report of the Surgeon-General of the Army for the year ending June 30, 1894, contains much that is of general interest, as the report of any head of a department so progressive in his ideas as General Sternberg, necessarily must. The question of the reduction in numbers of the medical staff is discussed at some length, but as we shall refer to this elsewhere it is not necessary to enter upon the subject here. An examining board had been convened to fill the ten existing vacancies, but when Congress reduced the force there were no longer any vacancies, the board was dismissed and the candidates were notified not to appear.

The Army Medical School has been in operation about a year, and the wisdom of its establishment has been already satisfactorily demonstrated. The principal object of its foundation was to impart a knowledge of preventive medicine, which is not often possessed by the recently graduated medical man, and also to provide for special instruction in military medicine and surgery. The school is established in the building recently erected in Washington for the Army Library and Museum, where also there is abundant material for bacteriological and chemical study. The course of instruction embraced the following subjects: Duties of medical officers in war and peace, military surgery, hygiene, and medicine, general and sanitary chemistry, pathology, and bacteriology, hospital corps drill, first aid to the injured, and equitation. The latter was not so superfluous as might be supposed, since two members of the class were entirely unused to riding. Nine medical officers were in attendance at the school during the year.

The work of the hospital corps is referred to with approval, the wisdom of establishing this branch of the service having been amply demonstrated. The number of members of the corps in service is 790, 49 less than the authorized quota. The number has been purposely kept down in order to keep the expense of the corps within the limit of the appropriation for its support.

Reference is made to the Medical Department of the National Guard in connection with the fourth annual meeting of the Association of Military Surgeons held in Washington in May. The Army Medical Department looked favorably upon the organization of the Association as a medium by which it might keep *en rapport* with the medical corps of the National Guard, in view of a possible contingency in which the State and National forces might be called upon to act in concert. The Surgeon-General of the Army was very properly chosen president of the Association for the present year.

The health of the army was nearly as good as during any previous year, the admission rate per thousand being 1,289.04, a great improvement on the average annual rate for the past two years (1,424.2) and only slightly greater than the lowest rate (1,247) ever furnished by our troops. The death-rate was 6.91 per thousand living, but little greater than the lowest rate ever recorded in our army (6.33) and considerably less than the average for the past ten years, namely, 8.51. The death-rate from disease alone, excluding accidents and injuries, was 4.01 per thousand.

Other questions treated of in the report are the quarters, some of which appear to be in a disgracefully dilapidated condition, poorly ventilated, badly drained and insufficiently supplied with water. The food supplied to the men was in general of a good quality, as was also the clothing.

The reports of medical officers regarding the habits of the men were generally favorable. At some posts where houses of bad repute are established in the vicinity, the sick report often becomes burdened with the results of dissipation, particularly after pay day. The recruits at Columbus Barracks are in particular exposed to harmful influences of this kind, owing to the location of the barracks within the limits of a city.

Inadequate provision for bathing is reported from several posts.

The benefit accruing from systematic work in gymnasiums is appreciated by all army medical officers.

THE BRUTALITY OF FOOT-BALL.

THE events of the past week have most thoroughly discredited the game of foot-ball as at present played. The contest at Springfield between the Yale and Harvard teams was one of the most unwholesome performances that ever masqueraded under the name of amateur sport. Players slugged into unconsciousness, eyes nearly gouged out, brains concussed, disabling sprains and bruises constantly interrupted the progress of the game, which even an ex-ball-player and friend of the sport declares to have been characterized by "sickening brutality." Besides this we hear of a student made insane through injuries received in playing, and two fatal accidents are reported. The number of young men who are permanently injured and who go through life more or less crippled in consequence of foot-ball playing can never be known. We should be sorry to see foot-ball abolished altogether from our colleges. There is no game that equals it in many ways when played as a manly sport and not for gate receipts. But the new rules are plainly ineffective, and unless some change can be made, the game really deserves to be placed under the supervision of Boards of Health working in co-operation with an efficient police.

Yale Medical Journal is the name of the most recent acquisition to medical journalism. It is edited and published by the medical students of Yale University under the auspices of an advisory board composed of some of the prominent alumni of the university. The first number makes a favorable impression. We wish it well.

News of the Week.

Antitoxin for Diphtheria.—Dr. Walter Wyman, Surgeon General of the Marine Hospital Service, in his annual report, says that investigations have been conducted concerning the etiology and pathology of the eruptive fevers, and the preventive inoculation against acute infectious diseases. A bacteriologist of the service is now in Europe familiarizing himself with the latest advances in preventive inoculation. This officer has transmitted to the bureau a supply of toxin from the Pasteur laboratory, with which animal immunization has already been begun (a horse having been purchased for this purpose) to obtain the antitoxin serum for the cure and prevention of diphtheria. On the return of this officer it is expected that the methods of preparing the toxin and obtaining the antitoxin serum from the immunized animal will be demonstrated from time to time to State health officers, in order that the benefits of this new remedy for diphtheria may be as widely distributed as possible.

The Samuel D. Gross Prize.—The quinquennial prize of $1,000 under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1895. The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens." The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1895. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer.

Death of Dr. Octavius Sturges.—We have to record the untimely death of Dr. Octavius Sturges of London. While still in the prime of life, Dr. Sturges was knocked down by a cab in Cavendish Square a few days since, and sustained a fracture of the left thigh. He appeared, however, to be recovering from the effects of the accident, and there was apparently no special cause for anxiety, but he died suddenly on November 3d leaving a large circle of friends to mourn his unexpected demise. It is a curious coincidence that, within the short space of one year, the President and the Senior Censor of the Royal College of Physicians should both have died in harness.

The Leading Medical Journals in the United States, as might have been expected, had much to say which was sympathetic and kind upon the subject of the death of Dr. Oliver Wendell Holmes. The memorial notices which seemed to us to be most worthy of the man appeared in the MEDICAL RECORD and the *Boston Medical and Surgical Journal.—Medical Press.*

The Woman's Medical Club of Chicago gave their first banquet Wednesday evening, November 14th. Gertrude G. Wellington, M.D., was Chairman of the Committee of Arrangements.

Iowa Association of Railroad Surgeons.—In pursuance to the call published September 25th, there was a good attendance of Railway Surgeons of the State of Iowa, at Sioux City, on October 10th, when the Iowa State Association was duly organized.

Middle Tennessee Medical Association.—The first regular meeting of the Middle Tennessee Medical Association was held November 20 and 21, 1894, in the Senate Chamber of the Capitol at Nashville. The Association was called to order by the President, Dr. J. B. Cowan, Tullahoma, at twelve o'clock. A large number of physicians were present.

The Northern Ohio District Medical Society.—The annual meeting of the Northern Ohio District Medical Society will be held at Fremont, O., December 6, 1894.

Mitchell District Medical Society.—The forty-sixth semi-annual meeting of the Mitchell District Medical Society will be held at Mitchell, Ind., December 27 and 28, 1894. This society is one of the oldest and most favorably known in the country, and this meeting promises to eclipse all previous ones.

Chicago Gynecological Society.—At the sixteenth annual meeting of the Chicago Gynecological Society, held October 19, 1894, the following officers were elected to serve the ensuing year: *President*, Dr. Franklin H. Martin; *First Vice-President*, Dr. A. J. Foster; *Second Vice-President*, Dr. J. C. Hoag; *Secretary*, Dr. H. P. Newman; *Editor*, Dr. T. J. Watkins.

Wabash Railway Surgeons.—The annual meeting of the Wabash Railway Surgeons was held at St. Louis, Mo., Thursday, November 1, 1894, in the parlors of the Southern Hotel.

New York State Association of Military Surgeons.—At the annual meeting of the New York State Association of Military Surgeons, which was held in the building of the Academy of Medicine on November 15th, the following officers were elected: *President*, Dr. R. S. Harnden, of Waverly; *First Vice-President*, Dr. C. S. Parkhill, of Hornellsville; *Second Vice-President*, Dr. J. A. Van Duyn, of Syracuse; *Secretary*, Dr. C. E. Herrick, of Troy; and *Treasurer*, Dr. J. F. Valentine, of Brooklyn.

Eastern Kansas Medical Society.—The Eastern Kansas Medical Society met at Kansas City, Kan., October 9, 1894, and elected a number of new members.

The New Hampshire Hospital Association.—The annual meeting of the New Hampshire Hospital Association was held at Concord, N. H., November 15th, with delegates present from Portsmouth, Manchester, Dover, Keene, Claremont, and Concord. Dr. C. F. Towne read an interesting paper on "The Relation of the Citizens to the Hospitals." This was followed by a general discussion of hospital needs. The next session will be held in Portsmouth in May.

The Eastern Iowa District Medical Society met at Keokuk, Ia., November 15, 1894. Dr. J. A. Scroggs, of Keokuk, Ia., president, in the chair.

A Chicago Physician.—Dr. Arthur Von Luna committed suicide on November 23d. He came to this country from Germany last summer.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, November 19, 1894.

SAMUEL B. W. MCLEOD, M.D., PRESIDENT, IN THE CHAIR.

Habitual Constipation; Its Treatment.—DR. HENRY ILLOWAY read the paper. Constipation was becoming more and more common, and was tolerated by persons who claimed to be in good health in other respects. It was a relative term, but was applicable, the author thought, to all cases where there was not one free passage in two days. Regularity might exist and the person have but one passage a week, and he knew of a woman who had her bowel scooped out once a month by a midwife.

Acute and chronic forms existed, but the author considered on this occasion only the latter. These were divided into: *a*, constipation depending directly upon a well-defined morbid process, such as cicatricial narrowing, cancer, etc., or secondary to disease in other organs; *b*, constipation depending upon inaction of the bowel. The paper was confined to this group. The author considered briefly the longitudinal and circular motion of the gut, the several sources of nerve-supply, and the influence of pathological conditions in some other organs, as the heart and spinal cord, in producing constipation. He did not think catarrh a cause of chronic constipation, and if cases of colic were excluded it was questionable whether there was such a condition as entero spasm.

Causation.—One frequent cause of constipation was neglect to answer promptly the call of nature, whereby tolerance was developed on the part of the mucous membrane and terminal nerve-filaments. Want of closets for use by the moving public was largely to blame in this matter. A second important cause was use of foods not containing sufficient residual matter. Our diet was composed too much of starches, sugar, fats, and meat. A third cause was the habit people were acquiring of trying to fill their heads (by reading) while emptying their bowels. A fourth was relaxation of the abdominal muscles brought on by absence of physiological exercise and deficient oxidation. The author did not lay much stress on the habit of purgative taking, although when carried to excess this might act like too much and too coarse residual matter, causing over-excitation.

Protracted constipation led to dilatation of the gut, the colon having been found of a circumference even of fifteen inches. In old people scybalæ were liable to form. The existence of fistulæ led the patient to avoid passages and thus tended to aggravate the constipation.

Fecal Intoxication.—The author thought this was liable to take place only where soft fæces flowed over long-retained masses. The question was also raised as to the manner in which the breath of the chronically constipated took on a bad odor, whether from the stomach or lungs.

Prognosis and Treatment.—Recognition of the cause was of first importance in outlining the treatment and pronouncing a prognosis. Each case had to be treated upon its individuality. In some a permanent cure could be expected; in others, only temporary relief. Where constipation depended upon disease of the heart, lungs, liver, or anatomical abnormalities, special measures would be called for. To overcome an atonic condition of the muscular structure of the intestine and to stimulate the nerves use calabar bean; nux vomica, arsenic, belladonna, hyoscyamus, and stramonium were sometimes indicated, but otherwise would prove positively injurious. Use belladonna for venous stasis. The author had not had success from very small doses of podophyllum, for which claims had been made in France. Other measures were mechanical, dietary, massage, and electricity. Walking, riding, and rowing were valuable, especially walking. Oxygen stimulated peristalsis. Riding was best for shaking up the bowels, for congestion of the liver, and for getting rid of and preventing the formation of gas. Hydrotherapy was useful, including injection of water at about 75° F. In some of the more obstinate cases use hot water and cold water alternately. Massage was indicated in all cases of atonicity and for the dispersion of residues. It was practised upon the naked belly, with unoiled hands.

Faradic electricity was more effectual than galvanic over the abdomen, while the latter was more effectual within the rectum. The author did not approve of dilatation of the sphincter in the treatment of constipation unless this were associated with fistula. Incontinence of fæces which might follow was a most horrible condition. One party had claimed good results from suggestion in the hypnotic state.

Constipation in Childhood.—DR. J. LEWIS SMITH thought that many of the severe standing cases of constipation in adults dated back to infancy. It was a wonder the patients lived so long, but they often finally succumbed to the condition unless the cause, perhaps a constriction of the bowel, were removed. Where an anatomical cause was not present, the diet was most likely to be at fault. One cause of delayed movement of the bowels in infancy was greater length of the sigmoid flexure than existed later. Carrying infants exclusively in the horizontal position favored constipation. Painful defecation would lead the child to suppress the act. Medicines were not an uncommon cause, including purgatives which were far from being so simple and harmless as their name would indicate. He did not approve of mothers giving the baby "castoria," "syrup of figs," etc. In institutions the best means of unloading the bowels was by an injection of one to two teaspoonfuls of equal parts of glycerine, castor-oil, and sweet-oil, added to a tablespoonful or two of water, allowing it to remain in the bowel as long as it would. The glycerine rendered the masses softer. Curative remedies were dietetic rather than medicinal. He had not found cane-sugar as efficient as had been claimed. Massage was of some use. Maltose was efficacious. Some of it might be given with each feeding in order to get a more regular movement of the bowels.

Permanent Cure Only in Recent Cases.—DR. S. W. DANA thought that by such means as the author had mentioned—electricity, massage, diet, etc., recent cases of constipation could be permanently cured, but not so the really habitual ones. Trousseau had commended belladonna, but it was not curative in this country; neither were the cannon-ball, the compressed sponge, or boracic acid. Habitual constipation was associated with a sedentary life. There were cases, more than we knew of, which were hereditary. In them, to seek to remove the cause would require going back to the parents and grandparents. As children these persons might suffer little, but as soon us they grew up and became seamstresses or pursued sedentary vocations they became obstinately constipated.

Camp Out.—Massage would relieve constipation. But Dr. Dana knew a better method. There were a large number of business men who went every October to the Adirondacks, lived in a log hut open on one side, spent their time hunting and leading an active life. These men had told him that during this time their bowels, which had been constipated the whole year, became easy and natural. On returning to the city they soon became constipated again and had to take laxatives until their next outing.

Dr. Dana did not know why there should be such an outcry against the use of purgatives. Elderly people especially had passed the time for a permanent cure of constipation. They were in misery unless their bowels moved. In many cases a regular passage could be secured by a dinner-pill, the patients felt better for it,

and were not more given to ills than persons who did not take them.

Dr. J. G. Coyle said that when he entered upon the practice of medicine he was not prepared to find constipation in women exist to the extent that it did. The cynical and sententious definition of woman by a college professor seemed not altogether inappropriate: a constipated thing with a pain in the side. The first doctor, whoever he was, must have been employed to relieve constipation. Massage was nothing more nor less than exercise of muscles, and with few exceptions as good results could be obtained by active exercise, but the passive form appealed to women. For men it should only be recommended to those who had more time than brain. In atony of the bowel no drug was so effective as fluid extract of cascara sagrada. In some cases strychnia and belladonna were very useful.

Dr. F. M. Nye had once relieved himself of an attack of obstinate constipation by green corn. He had heard of a man who "couldn't get a hole through his patient, sent out for a quart of yeast, squirted that up his bowel. Blazes! it didn't come away, and that's what made him croak." Dr. Nye had found a small dose of calomel, given regularly for a time, relieve constipation in infants.

Dr. Achilles Rose exhibited a cannon-ball, weighing over three pounds, a form which had given satisfaction to himself and others in constipation.

Dr. Illoway, in some closing remarks, said Trousseau had recommended belladonna only in cases of constipation supposed to be due to spasm of the bowel, and in such cases it was of value. He did not think length of the sigmoid flexure in infants had much influence, while milk from a constipated mother and use of soothing syrups and brandies had.

"**Medico-Chirurgical Notes on the Works of Hippocrates and Galen**" was the title of a paper read by Dr. R. Harcourt Anderson. Mention was also made of anæsthetics in the early and middle ages.

Clinical Department.

A CASE OF TETANUS NEONATORUM—RECOVERY.

By EDWARD C. RUNGE, M.D.,

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On August 7th, Mrs. H——, called me to see her newborn babe, which appeared to have been afflicted in a peculiar way for some days. I found the premises located in a healthful portion of the city, and bearing the stamp of a good sanitary condition: foul air, cesspools, or any other anti-hygienic elements did not make themselves apparent upon close inspection. Everything in the house indicated the order and care of a well-regulated household. The father seemed to be in perfect health. The mother had enjoyed good health during the entire period of gestation, except for a certain "nervousness" which was more pronounced during the early part of her pregnancy. This is her fourth child, and the first one to give any trouble. The fœtal movements were almost absent during the last month; some feeble ones were felt just a week before birth, which took place on July 23d, about one month before full term according to the mother's calculations. The labor lasted nine hours, the pains not having been at any time severe. It was a head presentation. The umbilical cord is said to have made four turns around the child's neck, and was severed some little time after birth. The placenta was not adherent, and came away about ten minutes after the child. The latter, a boy, weighing eight pounds, was profoundly cyanosed, "almost black," but uttered a short cry very soon after his birth. An enema was administered at once, for some occult reason. Whether the babe had received a bath at that time, or how the cord was managed, could not be ascertained, as the attending midwife had beaten a hasty retreat before my arrival, and the entire anamnesis had to be elicited from the mother. The latter did not notice anything unusual about the babe for two days. The cyanotic hue of the skin had given way to an intense redness; no "jaundice" was ever noticed. The little fellow nursed well and eagerly, and cried at times, but never lustily. The eyeballs seemed somewhat too prominent, and an occasional cast of one eye was observed. The intestinal and renal functions seemed normal. On the third day the mother was surprised at the "unusual strength" displayed by the babe; it would grasp her gown, and only with difficulty loosen its hold. The umbilical cord had become detached on some day before the mother's leaving the bed, which happened on the tenth day after confinement. A daily bath had been given since the detachment of the cord. On the tenth day after birth there seemed to appear the first difficulty in swallowing, the babe refusing to take the breast. Complete locking of the jaws supervened. This condition was aggravated by any attempt at introducing the nipple or a spoon. On the eleventh day the spasms of the masticatory muscles continued with temporary relaxations, during which some milk was forcibly given by the spoon. The milk was, at times, vomited (or probably ejected before it had reached the stomach). This condition was soon followed by tight shutting of the eyelids, stiffening of the extremities, and by drawing back of the head. The midwife, nothing daunted, was still directing her efforts toward combating this "unusual attack of colic" with castor-oil, rhubarb, and castoria. The parents finally concluded to call in medical aid, and on August 7th I found myself at the bedside of the little sufferer, on the fifteenth day of his extra-uterine existence, and on the seventh day after the onset of the malady.

In the dim light pervading the darkened room the babe's face showed a high degree of emaciation, the eyelids were closed, the countenance pinched, but otherwise normal. A curtain was raised for better inspection. No sooner had the bright light struck the infant's face than the forehead was thrown into transverse wrinkles, the eyelids, of which the superior ones appeared œdematous, shut more tightly, the mouth was puckered up as if in an attempt at whistling. The lower jaw was immovably fixed, so as to render the introduction of my finger utterly impossible. This paroxysm was accompanied by a half-suppressed, whimpering cry. I succeeded with considerable difficulty in extricating the little patient from a mass of coverings, cotton-batting, and lard-stained rags, and found him to be an apparently fully developed infant. The emaciation was general and extreme. The skin was of a dirty icteric hue, and covered with a papular miliaria, while the sclera and the mucous membranes did not show any icteric discoloration. There was a slight hernial protrusion at the umbilicus; the latter was perfectly healed, and did not show any sign of inflammation, past or present. I also made out a right scrotal hernia. The fontanellar pulsations were absent. The head was drawn backward by the rigid cervical muscles; a slight degree of opisthotonus was noticeable; the forearms were slightly flexed and crossed over each other; the fingers were tightly clasped over the thumbs in extreme flexion; the thighs were flexed upon the abdomen, and the legs upon the thighs; the toes were widely separated, and their extensors in an almost rhythmical clonus. The abdominal muscles hardened upon the lightest percussion. The paroxysm was followed after some time by a period of partial relaxation, the rigidity of the muscles never disappearing entirely. The slightest irritation—as by a touch, a sound, a change of light, a breath of air—did at once cause an acute exacerbation of all the tetanic symptoms. The alvine discharge, removed at the time of my first examination, was of a semi-solid consistency, dark

brown, and extremely offensive. The whole picture was so characteristic of tetanus neonatorum as to preclude any possibility of a diagnostic error.

I immersed the babe in a bath at 99° F., and kept it under water for six minutes. This seemed to bring on considerable relaxation, which lasted just long enough to enable the infant to take about one ounce of dilute milk from the bottle. A small portion of the milk was rejected, and the removal of the bottle ushered in another paroxysm. I ordered chloral in 0.24 doses every four hours by rectum, 0.03 of antipyrin and 0.12 of potassic bromide in solution cautiously dropped on the tongue every two hours; an immersion bath at blood-heat every four to five hours, each to last ten to fifteen minutes; nutrient enemata, consisting of milk, egg albumin, and sodic chloride; egg water by the bottle or spoon whenever the child's condition would permit the procedure. I, of course, insisted upon the exclusion of all adventitious sounds from the darkened sick-room, and upon keeping the patient well wrapped in simple coverings, discarding the complex apparatus of the conventional babe dress.

August 8th.—The pauses between the paroxysms have grown somewhat longer; this made more frequent feeding possible. The egg-water was never vomited. Diuresis was more active; the alvine discharges were more watery and less offensive. The skin felt hot. The thermometer was not used for fear of disturbance. Peptonized milk was ordered, and treatment continued, except for decreasing the dose of the chloral to 0.12, and adding whiskey in repeated five-drop doses.

August 9th.—The egg-water and peptonized milk were taken in greater quantity, and retained. The mother succeeded in straightening the lower limbs during the bath without producing an exacerbation of the tetanus. The nutrient enemata were discontinued on account of rectal irritability. Medication: Chloral 0.12 twice, antipyrin and potassic bromide every three hours. Baths the same as before.

August 10th.—The babe nursed more easily and willingly. It tired readily, but as soon as the bottle was moved the sucking was taken up, without producing a masticatory spasm every time. The face wore an improved look. Treatment continued.

August 11th.—The skin appeared more natural, having lost its icteric hue. The eyelids opened slightly, and involuntary winking was noticed for the first time. The trismus appears very much less frequently; the feeding was more successful, one ounce of peptonized milk being ingested each time. An enema brought a rather copious dark-colored discharge. The fingers could be separated with some effort. The cervical and dorsal spasms were still quite pronounced. Treatment continued.

August 12th.—The babe nursed well, taking about one ounce of milk every two hours. It seemed to crave the bottle, for the cry had lost its whimpering character, and was evidently appeased by the bottle. The eyes were opened, and remained open for some time. The fingers were more readily unclasped. The introduction of the thermometer into the rectum caused quite a severe tonic spasm of the muscles of the lower limbs. At 6 P.M., rectal temperature 104° F. Treatment continued, except chloral given but once.

August 13th.—The patient nursed well. The intestinal discharge showing undigested casein, the milk was given in greater dilution. The cries were quite natural. Relaxation was more persistent, and particularly marked after the baths. The babe was ordered back to the breast. Rectal temperature, at 10 A.M., 102.2° F.; at 5.30 P.M., 102° F. No chloral; antipyrin and the bromide every four hours; baths.

August 14th.—The breasts began to yield more milk; still the bottle was given at intervals. Rectal temperature, at 10 A.M., 100.9° F.; at 5.30 P.M., 100.4° F. Treatment continued.

August 15th.—General relaxation very marked. Alvine discharges of natural color. The eyes were opened readily and quite frequently. Rectal temperature, at 10 A.M., 100.9° F.; at 6 P.M., 101.4° F. All medication suspended. Baths continued.

August 16th.—The patient appeared weak, otherwise much improved. Relaxation continued, except that the fingers were still flexed, but the fingers overlapped the thumbs, and the clasp was not tight. The tetanic condition has disappeared completely. Rectal temperature, at 10 A.M., 99.2° F.; at 6.20 P.M., 101.1° F. The number of baths reduced to one in twenty-four hours.

August 17th.—Doing well. Rectal temperature, at 10.30 A.M., 101.2° F.

August 18th.—The babe is entirely breast-fed; weight, seven and three-quarter pounds. Rectal temperature, at 4.30 P.M., 101.1° F.

August 24th.—Weight, seven and three quarter pounds.

September 1st.—Weight, eight pounds.

September 14th.—The boy seemed bright. All functions were normal. He had the full use of his limbs, no muscular impairment whatever being noticeable. Rectal temperature, at 1.30 P.M., 100.1° F. Weight, ten pounds. The patient appeared in every respect a perfectly normal child.

I may sum up the important features of this case as follows:

The tetanus set in on the tenth day after birth; all of its manifestations disappeared completely on the fifteenth day after the onset.

The development and course of the disease in this case place the latter in the category of so-styled chronic tetanus, with its less gloomy prognosis.

As to the therapeutic measures, it would be impossible to decide how far they have contributed toward bringing about the favorable result. To serve this purpose they would have to run the gauntlet of much more extensive clinical experience. In managing this—my first—case of tetanus neonatorum, I had to overcome a strong prejudice against any, save physiological and hygienic, measures in dealing with the new-born. I felt that the occasion did not warrant the taking of extemporizing half-measures, or any dosing in strict accordance with hard-and fast pharmacopœial rules; 0.03 of antipyrin and 0.12 of potassic bromide every two hours, and chloral in 0.24 doses every four hours, seem a good deal of medicine for a patient just entering upon the tenth day of his earthly existence; but the violent nature of the malady rendered the adoption of truly heroic measures simply imperative. The frequent and prolonged bathing was a prominent feature in the management of the case, and I will say that it caused more lasting relaxation than any of the other remedial agents, produced repose more nearly akin to natural sleep, and, at the beginning of the treatment, stayed the trismus for a sufficient time to enable the patient to take some nourishment by the mouth. Rectal alimentation, which I should never neglect to institute, is not quite as satisfactory in the new-born as in infants at a later period of life.

Any attempt at solving the question as to the etiology of the tetanus in the case under consideration would lead directly into the field of conjecture and speculation. The umbilicus having failed to show any evident pathological changes, the case would most likely be classified as one of non-traumatic or "idiopathic" tetanus. It was not within my power to ascertain whether the baths given before the onset of the disease were improperly tempered. Foul air did not play any rôle in establishing the disease. The atmospheric changes were devoid of any startling features; from the reports obtained at the local weather bureau, I learned that for the three days preceding the attack, and on the day of the attack, the mean temperature registered 74°, 80°, 83°, 82° F.; the range between the maximum and minimum, 16, 21, 16, 21; the departure from the normal, — 4, + 2, + 5, + 4. These data point to an equable state of the atmospheric temperature; the same holds true for the first ten days of the child's life. The meconium had been passed in a normal way, and the alvine discharges had assumed

their usual character. In these and some more directions causes of tetanus of the new-born have been sought after. Upon perusing the literature on this subject I came to the conclusion that the etiology of non-traumatic tetanus is still a sealed book to us. Just to illustrate on what extremely weak grounds the explanation of the causation of this disease sometimes rests, I make mention of the case reported by Hein, as quoted by Dr. J. Lewis Smith: A citizen of Berlin lost, successively, two children with tetanus soon after birth. When the second child fell ill he observed that its cradle was exposed to a current of air. At the third accouchement the position of the cradle was changed and the infant escaped! Our salvation may possibly lie in the further pursuit of such experimental work as has been done by Beumer and Riper; its final result may prove that every genuine case of tetanus neonatorum is of microbic origin. Bearing such solution of the problem in mind, we should be ever careful of giving our new-born the benefit of the most approved surgical methods while we are inflicting upon them their first, unavoidable, trauma. Clean hands, a thoroughly cleansed cord, aseptic ligatures, sterilized scissors, a dry protective dressing, consisting of some non-irritating antiseptic powder (*e.g.*, equal parts of iodol and boracic acid) and gauze, are all essential features in the equipment of the modern obstetrician possessed of truly surgical instincts.

A CASE OF FATAL HICCOUGH OF UNKNOWN ORIGIN.

By D. B. McCARTIE, M.D.,

NEWARK, N. J.

WITHIN the last few months a new and continuous form of hiccough has appeared, unaccompanied by organic disease or surgical malady. The minute history of all these cases I cannot substantiate, but I know all were continuous and irremediable, and in several instances caused death. Some cases were treated in the hospitals, others at home, with meagre results, and most were looked upon as excessive forms of ordinary hiccough, when probably the disease was a new manifestation of nerve disturbance occasioned by some functional neurosis.

CASE I.—History: J. C——, bartender, aged twenty-eight; habits and family history good; no special nervous traits in family; an active, strong man; weight, 150 pounds; middle height. For years previous to present disease, on being shaved by his barber, he noticed that when the razor touched a circumscribed spot on the side of his chin, at the edge of the inferior maxillary bone beneath the mental foramen, a trifling scratch instantly brought on an attack of hiccough. This happened repeatedly, but the reflex action never continued longer than for a few seconds. He always could check it by the usual domestic remedies, as sipping water, holding the breath, etc. The last and fatal attack began after he had been shaved, and lasted five or six weeks, after which he died of exhaustion. The hiccough was almost continuous, except during sleep and for some periods to which this brief sketch particularly refers. After a day or two the case aroused much popular interest, since the patient was well known; and as a newspaper wonder stood out strongly in long, exciting paragraphs. As a consequence, cure after cure was recommended and tried, with faith in each new method, only to end in sad failure. Among thousands of popular devices nitrite of amyl was oftenest recommended, even outside the medical world.

It would be waste of valuable space to add any of the extraordinary remedies suggested; suffice it to say they all failed. The medical treatment for days was as hopeless, and in this department few remedies were left untried. The sedatives naturally were tried, but after slight relief the hiccough was renewed. One medical gentleman suggested the stomach-tube, which was eventually the only means by which a short reprieve could be obtained. The use of food in any form, after being swallowed about half an hour, caused the patient such distress by augmenting the hiccough, that he anxiously introduced the tube or artificially produced vomiting, for when the stomach was empty the hiccough weakened. I saw the case many times, and tried pressure on the phrenics in the neck. This lessened the hiccough very much and allayed the spasms of the chest, but on removal of the pressure the phenomena returned as vigorously as ever. I then strapped the lower ribs, which apparently lessened the spasms, yet the patient complained that they had not subsided internally. Cocaine pills were next administered, and much relief followed; but this was not sufficient to cause a sudden disappearance of the trouble, which the patient and everyone thought was to be obtained by some mode of action or drug. After this the patient continued to hiccough and grow weaker. Rectal alimentation did little to maintain his strength. About one week later an operation was performed on the irritable spot in the cheek, but failed to cure, having no scientific exactitude underlying its performance. On a second visit to the unfortunate fellow I observed that he was losing all his strength, and was very exhausted and wasted. As a last resource I tried massage, and to my surprise, after working gently at the toes and lower extremities for a brief time, he complained of an indefinite feeling about the epigastric region; presently he retched up some greenish watery fluid, and the hiccough stopped immediately. The patient brightened up and took some nourishment, which remained in his stomach without producing the hiccough. The interval lasted twenty-four hours, when it began again. The man now despaired and sank spiritless in his bed. Being called again, I tried the same remedy with instantaneous success. The hiccough stopped two days, then returned. In the meantime hundreds of letters arrived daily, and continued annoyance was kept up about the dying man. He also tried every remedy guaranteed as a sure cure. I saw him again three days later, and massaged him all over; again instant relief followed, and he remained free from the attacks an entire week, at the end of which time they recurred. I saw the case no more, as now he submitted to all kinds of treatment, plus an operation. One week later he died of exhaustion; no autopsy.

These cases appear to be of nervous origin, and, like any other hysterical malady, are prolonged by attention. They appear to be causeless, except through functional nerve perversion. In the above case no organic cause existed, or in any of the group lately reported. The disease is not due to organic stomach trouble, or pressure on the phrenic nerve; nor does there appear any reason as yet to ascribe it to any brain tumor or lesion which would not be lacking in various other symptoms. It remains at present to class this phenomenon as a neurosis of functional character. Most works on medicine ignore it, except as a concomitant to alcoholic excess, or antecedent to death, or accidental to obvious causes, such as pressure on the nerve trunk. The treatment, where exhaustion is the cause of death, would be suggested by like cases of functional nerve depression, like that of bedridden or hysterical patients. Little need be said on this score, except that the disease be recognized as a disease. Isolation, rest, removal from home, forced feeding, encouragement, electricity, and, above all, in these cases, massage, since the results above ascribed to it were undoubtedly manifest and instantaneously successful.

108 BELLEVILLE AVENUE.

Library of the Surgeon-General's Office.—In the Army Medical Library there are now, according to the recently issued report of the Surgeon-General, 114,567 bound volumes, and 183,778 monographs and theses on medical subjects.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent.)

THE BRADSHAW LECTURE—INFANTILE SCURVY AND RICKETS—PATHOLOGICAL SOCIETY—PERFORATION OF THE PALATE IN SCARLET FEVER—DEATH OF DR. STURGES—SMALL-POX—DIPHTHERIA—CHELSEA HOSPITAL AGAIN.

LONDON, November 10, 1894.

THE Bradshaw Lecture was delivered on Thursday before the Royal College of Physicians. This year the Lecturer was Dr. Thomas Barlow, who took for his subject "Infantile Scurvy and its Relation to Rickets." Dr. Barlow has worked assiduously at this subject and made it quite his own, and was, therefore, listened to with great interest. It is now eleven years since he stated the results of his observations on thirty-one cases. At that time the disease had not been generally differentiated, and such cases were spoken of as "acute rickets," even in the German school, where the idea that they were scurvy was repudiated chiefly because sponginess of the gums had not been noticed, but this symptom has been since shown to sometimes occur. Dr. Cheadle first reported this, and to him we owe to a great extent the present state of our knowledge of the clinical features of these cases. The soundness of his conclusions was maintained by Dr. Barlow, who has himself contributed chiefly to our knowledge of the pathology of the disease. In this Bradshaw Lecture he reviewed the main clinical and anatomical aspects of the disease, recalled the conclusions of his first paper, and then showed how far they had been modified by criticism and subsequent investigations. Copies of the drawings of his original paper from the *Medico-Chirurgical Transactions*, 1883, were submitted, and specimens were exhibited to illustrate the pathological conditions. I must not omit to say that in giving some account of the workers on the subject, Dr. Barlow did ample justice to America, from which he said the most striking evidence had come. He specially mentioned Drs. Northrup, Starr, Roche and others. It seems that the disease must be more common on your side the Atlantic, and it would appear to be on the increase with us, unless this apparent increase may be due to the increased knowledge which makes differentiation more general. Infantile scurvy is a disease of spoon-fed children. The spread, prevention, and cure are summed up in this statement. Still there are some fresh points in diet now and again cropping up. Thus the danger of proprietary foods is recognized, but it is not commonly suspected that sterilization of milk may be dangerous. Dr. Barlow spoke cautiously on the point, but suggested that prolonged high temperature might lessen the antiscorbutic powers of milk. The treatment is simple, appropriate diet and antiscorbutic remedies.

Antitoxin and diphtheria continue to occupy much attention, and one frequently hears of fresh cases in which the treatment by serum seems to have been most successful. It is now said that the British Institute will soon be able to supply the remedy. In the meantime supplies from the continent are falling off, and will soon be unobtainable. The Institute ought to have been ready before this, as I some time since suggested.

There was a good show of specimens at the Pathological Society on Tuesday, *e.g.*, rare examples of malignant disease, mediastinal tumor, peri-renal hemorrhage, carcinoma of kidney. Dr. E. W. Goodall read a paper on perforation of the soft palate in scarlet fever, and showed a preparation from a child of six months in which perforation was first observed four days before death. He had seen 14 cases, in 2 of which there were 3 perforations, in 3 cases 2, and in 9 only 1. They occurred at various periods, from the 9th to the 28th day. Generally they were by the side of the anterior arch. They might persist for weeks, and were probably the result of local sloughing. He had only seen perforation in diphtheria twice, and agreed with Dr. Fowler that the lesion is almost diagnostic of scarlet fever.

Dr. Octavius Sturges died this day week in consequence of injuries received a few days previously. He was knocked down by a cab in Cavendish Square, and though at first no internal injury was manifest, collapse set in and he died on the 3d inst. His chief writings were on chorea and pneumonia, and in connection with both of these his name will be familiar to many of your readers. He was senior physician to the Westminster Hospital, where colleagues and students alike held him in the highest esteem. At the Children's Hospital he held a similar position. At the Royal College of Physicians he was Senior Censor. In all directions regrets are expressed at his untimely death, mingled with admiration of his high character, unswerving loyalty to truth, faithfulness to conviction, and kindly sympathy with pupils and friends. As a *quondam* colleague, I would add my testimony to his upright conduct, and regret that so estimable a character should thus suddenly be removed from among us. We can ill afford to lose such examples. He was buried on Thursday, and a number of distinguished physicians attended the funeral service.

Small-pox continues to abate in London. Only eight new cases were reported last week. In the provinces, however, the returns are less favorable. In Dublin the disease continues. In Birmingham 69 fresh cases were reported. In Edinburgh there has been a fresh outbreak, to the extent of 50 cases in nine days, but I hear that the type is mild.

Diphtheria, which was rapidly falling in the number of its victims, has not declined further in the past week, in fact, the number of deaths went back from 49 to 54. At West Ham there were 12 deaths registered.

At last the committee of the Chelsea Hospital for Women have yielded to the voice of reason and resigned. There is no gracefulness in the act—it has been forced upon them by public opinion. I hope the governors who are to meet shortly will come in numbers and refuse to re-elect one of the old Board. I heard the medical staff will recommend the governors to appoint a special committee to deal with the subject of elections to the staff.

IS MALARIA A WATER-BORNE DISEASE?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Anent the discussion on the sources of malarial infection between Drs. Daly, of Pittsburg, and Dalrymple, of New Rochelle—places where malaria is comparatively rare—perhaps a word from one who has spent six years in the Mississippi Yazoo Delta, where the infection is endemic, would be of value.

In the first place, both gentlemen are right. Malarial germs are earth-borne, water-borne, and air-borne; in fact are disseminated by every agency that circulates except excessive heat. Now, I have frequently known of a succession of cases of pernicious malaria in a family who drank water from the same source. To illustrate: In the summer of 1890, I had two cases of malarial hæmaturia, one of which was fatal, one case of malarial congestion fatal, one case of typho-malarial fever not fatal, and one case of severe intermittent; all occurring in one family of six members; the one escaping being a very old lady. Situated about three hundred yards from this residence was another family of three members. One of these had malarial hæmaturia and died. The other two had very severe attacks of intermittent. About fifty yards from the first-named residence was another family, numbers not remembered, which developed two cases of malarial hæmaturia, one of which was fatal, and several cases of intermittent and remittent fevers. There were several other families living contiguous to the first-named house in every direction, who were exposed to all the atmospheric and general causes, but remained healthy. It was found that the three infected families had used water from the same cistern, and this cistern was

cracked and full of sipage water. The families who had remained healthy had used a different water-supply.

Again, it has been observed repeatedly in that section, that during a protracted draught, when the stagnant ponds and bayous are all drying up, exposing their beds to the sun, which soon converts them to dust which fills the atmosphere, malaria is rife in all its forms; but let there come a good rain sufficient to bring down all atmospheric germs and fix them to the earth again, and there will be a sudden cessation of all acute cases. This is so invariable that its occurrence can be predicted with certainty. Of course, chronic cases and those which have undergone structural change will persist.

I have been told of severe epidemics caused by upturning the earth and by the exposure of large areas of the soil to the rays of the sun, by "deadening" the timber, but none have come under my personal observation.

Yours respectfully,

ISAAC J. JONES, M.D.

1603 SOUTH CONGRESS AVENUE, AUSTIN, TEX., November 15, 1894.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Will Dr. F. W. Dalrymple, of New Rochelle, kindly answer the following questions for the information of the profession:

1. From what source does the Water Company of the village of New Rochelle get its water supply for distribution to the inhabitants?

2. If from wells, what is the evidence that there was no contamination in them from the land water?

3. If from a stream, what is the locality and character of the watershed drained by the stream which supplied the village water?

4. What was the storm-water fall amount and character for the two months previous to the outbreak of malaria?

5. What proportion of the people who suffered from malaria drank from wells in the village?

6. What were the sources of supply of lettuce, radishes, celery, etc., eaten by the persons taken sick; whether from muck lowlands or uplands?

7. What were the sources of the milk-supply of those taken sick?

8. What proportion of the men who worked in the sewer and cellar excavations were taken sick with malarial fever?

It is in no captious spirit that I ask the foregoing questions; I desire to get at all the facts for the sake of accuracy, and I sincerely hope, in replying, that no further epithets will be indulged in by the Doctor as to the views I advanced being "absurd;" for the Doctor will probably agree with me, that it is not difficult to mention now other well-accepted views in medical science that were previously more strange and unlikely than taking malaria into the system in the water we drink; and epithets are neither argument nor evidence, in this or any other discussion.

Yours,

W. H. DALY, M.D.

PITTSBURG, PA.

CIRCUMCISION—DO WE NEED LEGISLATION FOR IT?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: That delicate little procedure or operation, as Dr. Henry Levien would have it (issue of November 17th), circumcision, is again attracting the attention of our profession, and I believe there is no operation that has been so much discussed or spoken of for centuries as this rite of the Hebrews; and it is not surprising that it is the bête noire of our progresive Hebrew physicians imbued with the spirit of Listerism.

The chief fault that Dr. Levien finds with the Mohel (surgeon) is the ignorance of aseptic surgery, and he accordingly cites two cases, one of erysipelas and the other of excessive hemorrhage, that occurred as the result of the operation.

Those of our colleagues that practice among the Hebrews will admit that seldom, if ever, did they hear of complications after circumcision so grave as to cause death; it is of so rare occurrence, nay, so unheard of, that it is impossible to give any approximate data; it is infinitesimally small. Let the Board of Health statistics answer, how often do they contain reports of deaths as the result of circumcision. We do not attack modern surgery, with the great aseptic and antiseptic methods, but we venture to say that in the best modern hospitals, where Listerism is carried out in a most rigorous way, sepsis occurs a hundredfold more than in that small crowded room where the Mohel is the surgeon-in chief; and the surgeon of every hospital in the country would be proud should he be in position to point to as small a record of sepsis or other complications as the Mohel is able to. How to explain such a fact I do not undertake, but one feature of the Mohel's work is characteristic—his dexterity, the swiftness with which he performs the only operation he is able to, and which he has performed thousands of times, is so great that it only consumes one or one and a half minute, including time of dressing the wound, and, as I witnessed it the other day, it took at most forty-five seconds in all. The little time, say thirty seconds, which the wound is exposed might explain somehow why so few cases of complications occur in the Mohel's practice.

In conclusion permit me to state that: 1. As Dr. Levien himself admits the progressive Mohel employs antiseptics, he believes only the city Mohel does. I had an opportunity dozens of times to witness the country Mohel's armamentarium not complete without a bottle of carbolic and a strip of iodoform gauze.

2. There are licensed physicians, skilful and unskilful, and the same with the Mohels, but even the poorest Hebrew always seeks the services of the best, the one who is most popular as having the record of widest experience; for should the father be unable to pay the Mohel's fee, the invited guests respond to the Mohel's individual blessing of those present by voluntary contributions, thus paying for the opportunity to be present at a God-pleasing rite.

3. Circumcision, as practised by the Mohel on the infant, is no more of an operation than vaccination, opening an ordinary abscess, or severing a tongue tie.

4. As a custom and religious rite, circumcision cannot, and should not, be interfered with as carried out among them.

Permit me further to add that none of our most promiment surgeons ever attacked or ventured an adverse opinion in regard to circumcision, for we never see any evil results from it, and in many cases are sorry our patients have not been circumcised. As a patient of mine, an Arabian, aged thirty, upon whom I was compelled to perform circumcision about three months ago, for paraphimosis with extensive sloughing, exclaimed: "How ungrateful must I be to my father, who neglected his duty to me and left the work to be done by you thirty years afterward."

R. HOCHLERNER, A.B., M.D.

THE IMMUNE SERUM OF THE GOAT.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: "C." in the MEDICAL RECORD, November 17th, suggests that "it may be worth while to test the natural and artificial immune serum of the goat in future experiments." He is speaking of tuberculosis. Let me inform your correspondent, that there are past experiments which he will find described in the *Tribune Médicale* of Paris. Unfortunately I cannot give the date of the articles, having sent the files of this French paper to the Tokio Medical Library; but the year was either '92 or '93. One article is entitled "Goat's Blood in the Treatment of Tuberculosis," by Bertin and Picq; the title of the other is "Transfusion of Goat's Blood in Pulmonary Tuberculosis," by M. Bernheim.

Yours truly,

ALBERT S. ASHMEAD.

Surgical Suggestions.

Gall-bladder. — The tongue-shaped projection, to which attention has been called by Riedel, is present in many cases of hydrops of the gall-bladder; it is not infrequently confounded with a floating kidney on the right side.—KEHR.

Appendicitis.—Surgical interference is not advised during an acute attack of appendicitis, except when grave symptoms intervene, unless a competent surgeon is at hand. Under these circumstances the case should be operated upon after the so-called recovery.—ASHTON.

Lacerated Cervix.—The kind of suture I use in operation for lacerated cervix is braided silk boiled in wax, and these sutures can be withdrawn with such ease that the patient is scarcely aware of the fact.—NILSEN.

Keep your nitric-acid bottle away from your steel instruments.

Do not carry nitrate of silver in the same case with instruments.

Control of Hemorrhage in Cases in which it is necessary to remove the Arm, the Scapula, and the Clavicle.—The methods that have been employed in these cases have been: (1) Simple compression of the subclavian artery; (2) compression of the artery after resection of the clavicle; (3) ligation of the subclavian prior to beginning the amputation; (4) resection of the middle half of the clavicle and ligation of the subclavian; (5) Wyeth first tied the artery, then formed his flaps, and, when the arm, clavicle, and scapula were connected with the trunk by only the veins and nerves, secured the veins and cut the nerves; (6) the artery and vein have both been tied after resection of the middle portion of the clavicle.—KEEN.

Empyema.—No operation is justifiable unless the presence of pus is certain; unless thorough treatment by medicinal agents, blisters, etc., has failed; or unless the symptoms, dyspnœa, etc., are so urgent as to demand immediate relief. (And the only way to be sure of the presence of pus is by the use of the aspirating needle.)—ASHHURST.

The man who intends to be a surgeon should not only make a special study of surgical anatomy, but should do a considerable amount of practical laboratory work in bacteriology, pathological histology, and experimental pathology and physiology.—BILLINGS.

The shock of being knocked down by an anæsthetic, as it is frequently administered, is very great indeed, extremely like that of a heavy blow on the top of the head.—ROSS.

We chloroform the patients in order to give them ether.—GORGAS.

Excision of Gasserian Ganglion.—Hartley improved on this operation by opening the cranium without incising the dura, raising the temporo sphenoidal lobe, exposing the ganglion, and removing it as it lies beneath the dura mater. This method seems to have the advantage over the method of Rose, in the precision with which the ganglion can, under favorable circumstances, be removed, and in the absence of such disagreeable, and sometimes unavoidable, accidents as wounding of the parotid gland or the seventh nerve.—STEWART.

Impacted Stone in the Ureter.—If the calculus is thoroughly squeezed between the thumb and fore-finger, the wall of the ureter being stretched tightly over it, a longitudinal incision will, after the removal of the stone, so contract that in many cases its site cannot be afterward discovered, except by a very careful search. The ureter should not be sutured.—COTTRELL.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 24, 1894.

	Cases.	Deaths.
Tuberculosis	142	103
Typhoid fever	14	5
Scarlet fever	88	12
Cerebro-spinal meningitis	0	1
Measles	47	2
Diphtheria	167	35
Small-pox	7	6

Pathogenesis and Treatment of Influenza.—It is well known how popular the quinine treatment of influenza was when that *maladie à la mode* visited our shores. So far as my knowledge goes this mode of treatment was strictly empirical, no laboratory experiments having been made on its action. The medical world will therefore be glad to know that the experiments of M. Mossé have confirmed the good opinion entertained of the value of this drug in combating "la grippe." Rabbits were inoculated with the blood of influenza patients, and then quinine was injected subcutaneously. Four out of six of these animals remained unaffected, while test rabbits unprotected by the drug became very ill. Again, rabbits inoculated with pure cultures of Pfeiffer's microbe (furnished by M. Roux) were quite capable of supporting this inoculation, provided subcutaneous injections of quinine had been previously practised. Of three unprotected rabbits, two were killed by the inoculation. Efforts to cultivate (on gelatine) the pathogenic bacillus from the blood of an influenza patient were always unsuccessful. In one instance the pneumococcus, and in another the staphylococcus were obtained. The blood of animals experimentally infected with influenza yielded the specific micro-organism only on one occasion. This culture was endowed with but feeble vitality, and proved to be non-virulent. M. Mossé arrives at the conclusion that the influenza bacillus is found only exceptionally in the blood, and that when so found its virulence is enfeebled. It is, moreover, unable to live in an organism in which the drug in question circulates, viz., quinine. It would thus appear that the exhibition of quinine as a prophylactic is justified; that it should be prescribed in large doses as an abortive agent; and that, finally, grave secondary infections, especially if due to the pneumococcus, call for hypodermic injections of quinine.—*Paris Correspondent of The Lancet.*

A True Story.—A correspondent sends the following, for the truth of which he vouches: A young doctor who began his practice in Texas, west of Houston, was called to a confinement case in which he, being green and nervous, naturally had some trouble, the patient seeming unable to make the supreme effort for final expulsion. The only other occupant of the wretched quarters was an old crone in a sun-bonnet who was silently but steadily rocking herself near the foot of the bed. Finally the old woman croaked out, "Doc, I wouldn't bother any longer with that woman, I believe I'd quill her and have done with it." The medical man not knowing what "quilling" meant answered that he did not quite see the necessity for that yet. The old woman repeated this suggestion several times until finally the nervous, exasperated man turned angrily on her and said, "Madam, I'll be d— if I will do it. If you want to quill her you can do so, but I won't." The crone took from the wall a turkey-wing and drawing a feather from it proceeded to fashion something like a long quill tooth-pick and, filling this with snuff from her own private stock leaned over the patient and as the next pain came blew the snuff into the woman's nostrils. Quick as a flash the woman re-

sponded with a giant sneeze and the child was born with the sneeze. "Thar," said the old woman, radiantly, "I knowed mighty well that thar bust would make her break her holt." And it did, to the great instruction of the attending physician.

The Doctor in Fiction.—Another bad doctor—bad rather through circumstances than of deliberate intent—is pictured in a new novel. The medicus discovers a specific for cancer (he is an Englishman, we hasten to say, and not a resident of New York) and cures a charming lady. Unfortunately she is soon after killed in an accident, and her husband refuses to permit an autopsy. This does not down the scientific enthusiast, however, for he goes to the cemetery after dark and digs up his former patient. But the husband of the deceased, unfortunately for himself, appears upon the scene and repeats his refusal to allow the autopsy to go on. Science stops at no such trifle as that, and the unreasonable husband is killed and buried in his wife's grave, the body of the lady being taken home by the doctor and dissected. The virtue of the cancer specific is triumphantly demonstrated in her body, which is then interred in the garden of the intrepid scientist. Twenty years now roll by in an uneventful way. The doctor prospers and his beautiful daughter cuts her second set of teeth and reaches womanhood. Now comes the son of the murdered man and dissected woman, and wants to marry the daughter of the doctor-villain. The latter refuses, the young man grows angry, makes inquiries, and discovers the crime. The wretched doctor becomes conscience stricken when found out, and dies. The young couple marry and are happy ever afterward.

The Value of Quarantine against Cholera was demonstrated pretty clearly last summer in Germany. In August and up to the middle of September it looked most decidedly as if the invasion of the scourge, which threatened Germany the whole length of its frontier toward Austria and Russia, could not be stayed. Two months ago the deaths by cholera in the thirty-one western provinces of Russia taken account of had already figured up three thousand one hundred, with more than double that number of cases, and in Galicia and Bukowina, in Austrian territory, there were one hundred and forty-six deaths per day at that time. But the state, with its severe precautionary measures—the latter going so far as to hermetically close the Silesian frontier for weeks—successfully stayed the spread of the disease in Germany. In every instance where cases of cholera occurred, or were only suspected as such, the sufferers were rigorously isolated. More thorough and comprehensive methods, too, were adopted to prevent travellers afflicted with the disease from penetrating into the interior of Germany than have ever before been employed. Quarantine stations were established at every point where the danger of imparting the disease could possibly lurk. The result of these strict quarantine regulations was that very few cases of cholera occurred in Germany, and most of those were along the banks of infected rivers, the source of infection of the water being in another country, beyond the control of the German sanitary authorities.

"Thyroidism;" its Relation to Exophthalmic Goitre and to Hysteria.—The *Gazette médicale de Paris* for October 20th contains a report of a recent meeting of the *Société médicale des Hôpitaux*, at which M. Béclère presented a woman, thirty-one years of age, who had recovered from myxœdema after treatment with the thyroid glands of sheep. She had taken, by mistake, at the beginning of the treatment, three ounces of the gland in eleven days, and this excessive dose had given rise to symptoms of thyroid intoxication. English authors, said M. Béclère, have described these symptoms as tachycardia, instability of the pulse, elevation of the temperature, insomnia, agitation, polyuria, glycosuria, albuminuria, and partial paraplegia, with a sensation of heat and sweating. M. Béclère had further observed an acceleration of respiration, transitory trembling in the arms, exophthalmia, and a staring expression of the eyes. Was there not, he asked, a striking resemblance between these symptoms and those of exophthalmic goitre? Was not their appearance in exophthalmic goitre allied, perhaps, to a supersecretion of the thyroid gland? Furthermore, M. Béclère had seen that, during the course of his treatment, the patient had had distinctly hysterical symptoms, although there had been no previous neuropathic symptoms, such as aphasia, monoplegia, and anæsthesia of the right arm. Might it not be concluded from this, asked M. Béclère, that the thyroid juice excreted in excess was one of the exciting agents of hysteria? Furthermore, he said, when thyroidism appeared in an hysterical person, it roused hysteria in her, as other intoxications did. M. Béclère thought that the syndrome of exophthalmic goitre denoted supersecretion by the thyroid gland, and that it acted like the poisonings that proved exciting causes of hysterical outbreaks.

Boiling Abscess Cavities.—The Paris correspondent of *The Lancet* describes a method employed by Jeannel, of Toulouse, in the treatment of localized tuberculous lesions, such as abscesses, ulcers, osseous, and joint troubles, with boiling water as a cauterizing and bactericidal agent. The method is applied as follows: After having freely opened the seat of mischief and slit up any sinuses that may exist, he excises if the lesion involves a joint. All the caseous detritus is then removed by curetting and thorough sponging of the parts, all bleeding being arrested. Then salt solution, maintained at the boiling point in a recipient (coffee-pot) is allowed to fill the cavity through a thick rubber tube. The cavity is then afterward filled and emptied until a sufficient degree of cauterization is effected. It will be seen that this *modus operandi* is only possible in the case of a funnel-shaped cavity whose sides can be raised and kept apart by tenacula and which is unprovided with counter-openings—a condition frequently met with in practice. A second and preferable procedure is also employed by M. Jeannel. This consists in first filling the foyer with cold or tepid salt solution, and then raising the liquid to boiling point by introducing into it the blade of a thermo cautery at a red heat. One minute suffices to fill a cavity the size of a pigeon's egg with boiling water in this way. The thermo-cautery method insures a constant temperature of 100° C., but it is applicable only in the case of an abscess cavity wide enough to allow the introduction of the blade without touching the parietes. General anæsthesia is, of course, necessary, except in cases of small abscesses, when cocaine, locally applied, is adequate. When the patient awakes considerable local pain is complained of, but this disappears the next day. The parietes of the cavity—or the abscess membrane, as this used to be designated—becomes gray, and yields a copious secretion of serous discharge, which renders frequent renewal of dressings a necessity. In a few days a detergent process is evident, granulations develop, and cicatrization rapidly ensues. Suppuration is rare; in certain cases, indeed, primary union is obtained. The boiling-water method is superior to ordinary cauterizing procedures in that it softens, disintegrates, and sterilizes the tissues to a greater depth.

The Corset in France.—A petition has been presented to the French Chamber of Deputies against wearing the corset as injurious to the health of the female part of the population. The Chamber solemnly received the petition, and passed it in committee. Meantime a Paris journalist has been gathering the opinions of notable women. A great many of them denounce the corset, declaring it to be unhealthy and ungraceful. They say it turns the figures into one commonplace mould, spoiling pretty ones and doing nothing to improve the ugly ones, yet most of the fair ones interviewed, who expressed themselves in this fashion, wore the objectionable garment.

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REMINISCENCES OF DR. J. MARION SIMS IN PARIS.

BY EDMOND SOUCHON, M.D.,

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I HAVE often related to my friends the manner in which I happened to meet our surgical genius, Dr. J. Marion Sims, in Paris, and his first experiences in the French capital. They all were much interested in this as they were in everything pertaining to this great and good man, and they repeatedly asked me to write out the little story for the benefit of the profession at large. I, to-day, comply with this wish, regretting very deeply for all concerned that my pen is not more gifted, so as to do better justice to my hero and to my readers.

In the fall of 1860 I entered the old Charity Hospital on the rue Jacob as a benevolent student, in the service of the venerable and world-renowned Professor Velpeau. It was my first beginning in the study of medicine. Facilities to beginners over there are not so great as they are here, in our Southern hospitals especially, and in order to have a chance to come in close contact with the professor and the patients, a simple voluntary student of the service had to be over zealous with all, particularly the all powerful internes or lords of the service. After several months of trial I had succeeded in ingratiating myself with them all, and having been intrusted with the registration book of the in coming and out-going patients, with the number of bed, diagnosis, and dates, I had managed to be on as fairly good terms with Professor Velpeau as a little insignificant nobody like myself could be with such a magnate as was the great Velpeau in such a place as the great Paris at that period. This may seem rather hard to American students, but it is all true none the less.

Early one morning in the latter part of October, 1861, the year the War of Secession broke out, I was going to the hospital, and, as I was about to enter the gate, my attention was attracted at once by the face and appearance of a man who was coming toward the gate also, but from the opposite direction. That the face and appearance struck me at once will readily be believed by all those who have had the happiness of knowing our great American surgeon. Its characteristic soft and sweet expression, together with his deep-set, bright eyes and prominent, bushy eyebrows, the half smiling expression of his mouth, left uncovered by the absence of mustache or beard, made a much deeper impression on me than a glance ordinarily produces. I also at once recognized that he was a foreigner, and no Englishman at that, but surely and unmistakably an American, perhaps, hastily thought my young rebel heart, a Southerner; he must be that, I thought immediately afterward, because he looked so gentle and good, and yet, withal, so firm and self reliant. All this took but a few seconds, and I continued my course toward the ward to which I was assigned, walking through the yards with another student and the stranger coming up behind. When I reached the door of my ward I went through and closed it; it was soon opened again and closed; turning around I noticed my "American." The doctor told me later that at the foot of the stairs the other student went in another direction than I, and he was perplexed for a moment as to which one he would follow; after a little hesitation he said to himself: "Well, I think I will stick to the little one." The little one was myself.

I walked to the bed of the patient who took care of the white aprons the students wear over there, to protect their clothes, and, as I was putting it on the stranger came up to me, and after a most suave bow, said in a very slow and deliberate manner, that the Frenchman he thought he was addressing might have some chance of understanding: "Will—Professor—Velpeau—be—here—to day?" I burst out laughing and answered him in fluent English: "No, sir, Professor Velpeau is absent on his vacation and will not return before two weeks." The beautiful face brightened up at the sound of the English language where and when he so little expected it. "Where are you from," said he, "that you speak English?" "I am from the South, from New Orleans," said I, thinking that that would cool his enthusiasm if he was a Yankee. But far from it, he grasped my hand and pressed it so as to crush it. "Why," said he, "I also am a Southerner; I lived a long time in Montgomery, Ala." That made us friends at once. I showed the doctor around the hospital and finally asked him what he had come over here for.

"Well," said he, "I am Dr. Marion Sims, now living in New York, who has invented a method of operating for vesico vaginal fistula with almost invariable success." He looked at me to see if the name had made any impression on me, but it fell flat; we had never heard of Dr. Marion Sims in Paris. Furthermore, we all knew that nobody in the world knew anything about vesico-vaginal fistula except Professor Jobert de Lamballe, of the Hôtel Dieu, and, even under him, vesico-vaginal fistula was cured only exceptionally, even when using his procédé de glissement (sliding process), and the idea of this new man coming to Paris to teach French surgeons how to cure vesico-vaginal fistula almost infallibly, somewhat shook my faith in my new friend.

He said he had a letter for Professor Velpeau from Dr. Valentine Mott, of New York; that he was anxious to see the professor to get a case to operate on before him and thus to demonstrate his method. "Well," I said, "the professor will be here in some fifteen days," soon enough for your good, I thought to myself.

During that time the doctor was living in a little boarding-house in rue de l'Université, close to the hospital. He had invited me to dinner upon our very first meeting, and I went there once or twice to give him all the points about those men he was most likely to meet. He was all the time sanguinely confident and looked so sweet, so modest, so magnetic, that I began to feel a very strong drawing toward him, and by the time Velpeau was to return I was wound up to a high pitch and as eager as my friend that he should have a case soon.

Finally Professor Velpeau arrived, and I sent word to Dr. Sims immediately; he soon came to present his letter, which Velpeau read at once and fluently, but when it came to speaking to Dr. Sims he was at a loss to express himself and looked around for me. It was always the case when prominent English visitors came to the hospital. Although the Englishmen read and wrote French as well as the Frenchmen read and wrote English, a good deal better than I could then, yet when it came to talking they had the greatest difficulty in understnading each other, and I was always hunted up to help

them along. At that time Velpeau was nearing the end of a most hard-worked career, and, although age and success had softened him, yet he still bore the effects of his lowly, rough, peasant birth, and of his hard earned victory. At times the stiff haughtiness of the former years of struggle came over him. It did so to some extent at that time, and he was not to Sims exactly what he should have been, as I thought, and his coldness to him made my heart ache somewhat, as I took that to be of ill omen. The truth was that the name American at that time in Paris always evoked the name of Barnum, and the fact that a comparatively young surgeon posed as a successful operator on vesico vaginal fistula, when scarcely anyone, not even Jobert de Lamballe, ever succeeded in Paris, had rather prejudiced Velpeau against Sims.

After a few, very few words, Velpeau said to me, "Eh bien, que veut-il?" "Well, what does he want?" I translated the sentence to Sims, who at once modestly but firmly answered, "I want a case to demonstrate my operation, if the professor will be kind enough to procure one for me." "All right," said Velpeau, "I will get him one," in a way that showed he had but little confidence in the final result. Then he turned around without a hand shake or a word more to Sims and went on with his visit. I felt quite hurt, but could say, and said, nothing. Velpeau was the idol of all young aspiring surgeons, the demi god of the day. Nélaton was just looming up then, and had not as yet had his famous Garibaldi case which gave him world-wide fame.

For several days no case turned up. Sims was there every morning. I would introduce him to the younger surgeons who always swarmed around the old master, that he might not forget them. To every one who inquired about his object he said, "I want a case," and I myself would then also say, "He wants a case."

At last the case came! And, just as luck would have it, a case of moderate difficulty. "Thank the Lord," said I, with my American pride roused now to a high pitch for fear Sims should fail! When he told me he was sure to succeed it was a great relief.

By this time the whole of the old Quartier Latin had heard of the news, which had rapidly spread from hospital to hospital. On the day of the operation the famous little operating-theatre in the old Charity Hospital was overcrowded with students, and the arena below crowded also with the most distinguished professors of surgery of the French capital; Velpeau, Nélaton, Ricord, Malgaigne, etc., all but Jobert de Lamballe, who would not come.

Before beginning the operation Dr. Sims proceeded to demonstrate it graphically, by using a piece of thick and hard cotton batting, through which he cut a hole representing the fistula, then he pared the edges slantingly in one strip, next he passed the silk threads and the wires, etc. The doctor called on me to translate as he spoke. I was not expecting this, and before such an audience, and I felt shy and scared, but he so insisted with his sweet eyes and smile that I got up, trembling all over, and with a quivering voice would repeat in French each sentence as he uttered it in English. Gradually, however, I found that it was not so very hard, I became emboldened and went through the whole procedure with comparative comfort. After the demonstration Dr. Sims proceeded with the operation, which he performed with the skill and grace which characterized him. It was done in comparatively no time, closely watched and followed all the time by the French professors. When the doctor finally said it was done, a salvo of applause broke out from the benches; the professors rendered justice to the manner in which the operation had been performed, while reserving themselves mentally until the day when the sutures would be removed.

Dr. Sims attended to that case himself in the ward, and during the following days felt all along confident that it would be a success; and a success, a tremendous success, it turned out to be.

On the ninth day the same amphitheatre was again packed to witness the removal of the sutures; the case was pronounced cured, and this was confirmed by the French surgeons, who congratulated Dr. Sims.

The enthusiasm of the French students far exceeded their former outburst, and, since they could not very well carry Dr. Sims on their shoulders in triumph they took hold of me in his place, and the resident students carried me to their mess room to breakfast with them; a great and unprecedented honor in those days, for I was but a vulgar, simple, insignificant first-year student! I did more talking than eating, and the result of the excitement of mind and of heart was a very fine first-class headache that sent me to bed and lasted twenty-four hours.

However, some seemed to think that it might have been a chance cure. But these were soon to be set right. Immediately after the success of the first case, Dr. Sims started on the war-path for another, which was soon procured for him by a physician in private practice. But this case came very near being a Waterloo. It was taken to a private place, the Hôtel Voltaire, on the Quai Voltaire. The patient was a short, fat, stumpy little woman, and very obstinate. She, all of a sudden, absolutely refused to be operated upon unless she was given chloroform and put fast asleep. This much annoyed Dr. Sims, because in those days it was not thought quite safe to place a patient on the left side, the side of the heart, to give chloroform to the extent of keeping her perfectly still, since nothing could be done otherwise, and for such a long period as an hour or two. We were far then from the ideas of the present day. There was no overcoming her stubbornness and her will had to be done. It all went well for a while, a good while, but, all at once, the breathing became stertorous, the face blue, and the pulse flagged. The operation had to be suspended until she recovered. The operation was then resumed, but soon had to be stopped again, for the same reasons. Things were looking a little blue also, and as though the operator would not be able to complete the operation. But it was not to be so; it was to be completed, but it took Sims's whole nerve and skill to bring it to completion. During all that time the distinguished guests present said and did nothing, leaving Sims and his assistants to do all the fighting and get all the odium in case of failure, but all the credit in case of success. At one time I spoke to Velpeau to ask him what he thought of the condition of the patient, he shook his old silvery head and I imparted to Sims what I took that to mean, that he might make the best of it. Finally the patient rallied and was put to bed. At the end of the usual time this case was pronounced a success.

A couple of weeks later Professor Jarjavay secured another case, upon which Dr. Sims operated at the Hôpital St. Antoine. At the time of the removal of the sutures, a week or so later, Dr. Sims was not pleased with the appearance of the parts, and expressed his apprehension of some ulceration setting in and destroying the work done to a greater or lesser extent. Professor Jarjavay said that even if there was a fistulette (a small fistula) left it would not matter much. Although he seemed to say this in a good spirit, yet it occurred to some of us that some people would be glad to hail this as a failure of the so-called infallible American method. But no fistulette occurred, and that case was also placed on record as a complete success.

From that time on cases were quite frequent, and naturally so, since hardly any were ever cured before; the stock of fistulæ was very great, and cases were not wanting. It was specially in private practice that they appeared to be abundant, and Dr. Sims scored success after success with the greatest ease. However, he again struck another hard case, even a worse one than the one at the Hôtel Voltaire; it was the famous case of the "countess" out in the country, in a château, a patient of Professor Nélaton. She also insisted upon taking chloroform, and when the operation was about half

through she showed all at once most alarming symptoms. It was then that Nélaton uttered the legendary, cry "Head down," which everyone conversant with these matters must remember. After much and still more anxiety the poor illustrious patient was revived and the operation was safely completed. It turned out also a complete success.

Cases followed one another wherever the doctor went; in Paris, London, Germany, etc., he was kept busy with fistulæ and other female cases. It was he who then sowed the first seeds of true gynecological science and art throughout Europe, the science so eminently and thoroughly American.

Wherever Sims went he coined money, although he incessantly, willingly, and kindly did much charity work. He is the only man I ever knew or heard of who had such a vogue wherever he went. No French, English, or German surgeon could go to the capital of another country and have such calls and such success, no matter how great he was considered at home.

Dr. Sims made a host of friends among the surgeons of all countries, and it could not be otherwise, with his gentle, kind, unpretentious ways. However, some of his easy going American professional ways did not suit all of them, and some became a trifle cold and reserved toward him. Perhaps they were glad to find some flaw, ever so trifling, in such a beautiful gem. Surely, if they could have read thoroughly through his pure and simple heart and mind, they would have seen how unconventional were his ways, and how little he thought he was giving any offence or had any idea he was doing wrong.

Some time after all this the doctor brought his family over to live in Paris. From that time on the doctor's history is known to all Americans proud of the surgical genius born in our great land. One day he said in a burst of kindness: "How fortunate it was for me to have met you that morning I went to the old Charity. I was so thoroughly discouraged that I had about made up my mind to go back home!" Of course it was his goodness which made him express it that way and with such force, for he surely would have met some one else to play the rôle I was so fortunate and so happy to perform. He spent his money lavishly: all the needy Southerners and Northerners then in Paris were recipients of his generosity.

One day in his house, in the rue de Balzac, we were alone in his studio when he all at once asked me: "How are you getting along here, anyhow?" "Well," said I, "I am starving as slowly as I can. All resources from home have ceased since the war has begun, and but for a little position of $20 a month, which Professor Velpeau's influence secured for me, I would have succumbed to hunger and cold by this time." He replied, "Anything you need I will be glad to give you; I am making plenty of money now." I thanked him very much, but gratefully declined any assistance, because, if I borrowed, I intended to return it some day, and just then it was rather problematical if I should last to return and pay any indebtedness. However, he would not be contented unless I promised him to come to him if ever I needed any help. All this was said and done with a simplicity which was overwhelming, especially to one accustomed by recent education and association to the good but exuberant French people.

The following year, however, was the time for me to prepare my competitive examination for the "Internéship," *i.e.*, to be admitted a resident student in the Paris Hospital. That examination is, over there, the pons asinorum. It is held as the proof that there is something in the man, and in fact very few are those who attain any eminence in Paris who have not gone through that ordeal. It is really a very hard competitive examination, and it requires all the time of any student from early morning till late in the night to succeed. Very few succeeded the first time, usually it required two trials at one year's interval. I had to do it in one year or quit the study ot medicine. I needed, therefore, every moment of the days of the year of preparation, and therefore it was necessary for me to renounce my little situation. Now if I could not get Dr. Sims to assist me as he once proposed to do, what would become of poor me! Of course he had offered his assistance, but that was nearly two years ago, and perhaps he had changed his mind since, or could he still afford to do it, now that he had a large family to provide for in a gay and expensive capital?

I called at his house, then in the rue de Suresnes, so familiar to so many Americans, but he was out of town and would not be back for some time. When? No one could say positively: he was in London, they said, and very busy there! Yet time was flying and I had to take a decision, and no Dr. Sims! But at last he returned. I called in the middle of the day, thinking I had then a better chance of meeting him alone. He was in fact alone, taking his lunch; as usual, he greeted me with his kind look, sweet smile, and hearty shake hand. He invited me to lunch with him and I sat down to the table; but I could not swallow a morsel, my mouth was dry, my throat contracted, and my heart beating very fast. After a little trivial talk I summoned up all my courage and said to him: "Doctor, you once told me that if ever I was in need to come to you, and that you would help me along. Well, I am now in the greatest distress and upon you depends my whole future." "Why, what has happened, Souchon," said he, with concern in his dear face. "Well, sir," said I, "I have to give up my little situation in order to prepare for my examination for the residenceship of the hospital, and unless you give me today the assistance you offered two years ago, it will be impossible for me to do so and I must give up the study of medicine." "Oh, no," said he, "don't do that, I will help you certainly; how much do you want?" It was said with such natural kindness and simplicity that my heart sank within me: I felt as if a thousand pounds had been removed from my breast. "Thirty dollars per month will suffice," said I. "What," said he, "a dollar only a day. Oh no, take two." I thanked him very gratefully but consented to accept only one dollar and a half a day, remarking that I might never be able to return that little even. "All right," said he, "I will take my chances on that." He retired to his library and soon returned with a check for the first month in advance, and also for several hundred francs to buy some little furniture and clothing which he said I very likely needed. I should think I did need them! From that time the check came every month, no matter where he was—in France, England, Germany, Russia, Italy, or America. He never forgot it once, and when it happened, very rarely, that he was a few days behind, he would write a few words of apology.

When at last I was so fortunate as to succeed in my examination and I telegraphed to him in London, he immediately wired back that the news had sent a thrill of joy through the whole family; this in its turn sent a thrill of joy through me also.

The doctor's reputation had acquired such proportions that the French Government presented him with the decoration of Knight of the Legion of Honor, the highest ambition of all Frenchmen. It so happened that I was present in the forenoon of the day when the mounted dragoon from the State office brought the large, many-sealed envelope containing the brevet. It was the cause of great rejoicing in the family and among his friends. He himself did not believe very much in such trinkets, but he was happy because all around him were happy. I was despatched to go down to the Palais Royal to buy the ribbon worn in the button-hole. I chose it as nice and neat as I thought he would like, and brought it home, when I had the happiness of being asked to place it myself in the button-hole on the left side, over his noble and good heart.

Another notable instance of his great kindness is, when upon a visit through a London hospital, the physician in charge told him that he had in his ward a Confederate

surgeon who, heart-broken, had left the down-trodden South to seek rest somewhere. He had worked his passage through to London by acting as steward on board ship, but when he reached London his little money, his feeble health, his crushed heart, all had given way and he had stranded in a London hospital. Sims at once went to him, recognized a friend from the same grand State of Alabama, cheered him, saw him well, and brought him to his own house, and assisted him back home. All this I was told by the man himself, who, upon his return home became a most noted teacher of medicine in one of our famed Southern medical colleges.

I remember Dr. Sims in only one case of sickness. He was alone in the Grand Hotel in Paris, without any of his family with him, when he sent me word to come and see him. He had been suffering for some time from a repetition of an attack of pain and swelling in the right iliac region, and seemed concerned about his condition. Surely if it had been some years later he would have been appendicitized. But, thank God, he got well without the knife.

Alas! but that no human happiness is ever without a dark cloud! It was my distressing lot to be present at his house when the sad news came of the death of his eldest son, Granville. It was but a short message, quickly read, followed by a cry and a sob: "Oh God! Granville is dead!" Granville had torn himself away from Paris and his family and had gone to Havana to find a chance of running the blockade. He was there waiting for his opportunity, when he was attacked with yellow fever and succumbed very quickly.

Much more could be said of this great and good man during his stay in Paris, but it would require some one abler than I am to do justice to such a subject. He was surely one of the most magnetic men I ever met, and he made such a deep impression on me by his genius, energy, his courage, his goodness, his kindness, and his gentleness, that for many years ot the early part of my life he was the model and the guiding-star I strove to follow.

CHOLELITHIASIS.

By J. H. HOELSCHER, M.D.,

CHICAGO, ILL.

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The history of gall-stones is imperfect. Reference to an old Latin work, known as "Lazari Riverri Praxis Medica," of the year 1653, gives an account of calculi which were found in the fæces and connected with symptoms of hepatic disease. Cullen's "Practice of Medicine," of 1792, contains considerable on the subject, and Watson's "Practice of Physics," of 1798, also contains statements which compare favorably with some of our present literature. This book contains the interesting statement that animals when stalled all winter become affected with gall stones, from which they recover when fed with green grass; this fact led an able physician to the belief that grass would cure gall stones and jaundice.

It is consistent with this paper to give a synopsis of the recent chemical analysis of bile and whatever pertains thereto. Secreted and excreted by the liver cells, it flows from the hepatic duct as a non viscous liquid, and when it comes in contact with the ducts and mucous membrane of the gall-bladder, an admixture takes place with a secretion from the ducts and gall bladder which gives it a certain viscidity. This secretion contains a substance known as mucoid nucleo albumin of bile.

Perfectly fresh human bile has a bright yellow and slightly reddish color, a bitter sweet taste, is generally odorless, of alkaline reaction, and a specific gravity of from 1.005 to 1.008. Chemically it consists of: 1, Sodium salts in combination with bile acids; 2, coloring substances known as bilirubin and biliverdin; 3, mucoid nucleo albumin. Other constituents are cholesterine, neutral fats, soaps, lecithin, mineral matters, traces of iron and gases, of which CO_2 is the most abundant. The bile acids and coloring matters are secreted by the liver cells. Cholesterine is excreted by the liver, and exists in the bile in a proportion of from ½ to 3 per 1,000. It is held in solution by a combination of bile salts and acids. Among the mineral constituents sodium salts are most abundant, and especially sodium chloride in the proportion of 5 to 1,000.

The quantity of bile secreted in twenty-four hours varies from a pint to a pint and a half; diminished during abstinence it increases immediately after meals, which increase is maintained about one hour. From three to four hours after meals it again increases.

This brings us to the consideration of the chemical composition, physical characters, and formation of gall-stones. They vary in size from a seed-like concretion to stones as large and larger than nutmegs; they may be irregularly rounded, smooth, faceted, polyhedral, and very rough and irregular. They vary in color from a light yellow to dark brown or black. A cross section reveals either a series of layers, or a homogeneous structure and a nucleus. The layers consist of cholesterine; the nucleus may consist of biliary pigments combined with calcium compounds, mucus, shrivelled epithelial cells, and sometimes foreign bodies; thus a case is on record where an ascaris lumbricoides formed a nucleus; Naunyn reports a case where a needle formed a nucleus, and cases of gall-stones in animals are on record where the distoma hepaticum formed the nucleus.

Chemically, gall stones consist of: 1, Pure cholesterine; 2, cholesterine and bilirubin-calcium; 3, calcium almost entirely; 4, bilirubin thirty per cent. and calcium; 5, a combination of all the ingredients.

This brings us to the study of the theories that have been advanced in explanation of gall-stone formation, and I shall adopt the following classification: 1, Causes located in the common duct; 2, those located in the gall-bladder; 3, those located in the bile; 4, those located in the liver.

The first class implies obstruction of the common duct and retention of bile; this latter condition has been cited as a cause. That this is inconsistent can be understood when we consider: 1, That the lymphatics absorb the biliary constituents; 2, chemical analysis of the fluid in a distended gall-bladder shows an absence of biliary constituents; 3, absence of bile ingredients precludes gall-stone formations; 4, practical observations have demonstrated the absence of gall stones in hydrops of the gall bladder, where the duct is obstructed by tumors, etc. Gall stones may cause retention and are to be regarded as a cause. Under the second class, or causes located in the gall-bladder, we have the presence of foreign bodies, such as ascaris lumbricoides, needles, distoma hepaticum, casts of intra hepatic ducts, and epithelial débris.

Naunyn has advanced the theory that gall stone formation is due to the entrance into the gall-bladder of the bacillus communis coli, which in connection with a retarded bile-flow causes a calculus forming catarrh; a condition wherein the mucous membrane of the gall-bladder secretes calcium carbonate. This theory is rather nullified by the fact that ligation of the common duct, followed by an injection of the bacillus communis coli into the gall-bladder, causes death rapidly on account of general infection; when, on the other hand, the duct is not obstructed, a similar injection causes neither local nor general changes; possibly because bile is sterile and aseptic, and thus assists in preventing pathological changes. It cannot be denied that the bacillus does enter the gall-bladder, because Naunyn and others have found it in cases of acute cholecystitis and suppurative lesions of the gall-tracts. These facts lead me to believe that it is not to be regarded as a cause of cholelithiasis, but rather as an agent in the production of complications; indeed, the presence of calculi may be looked upon as indirectly favoring the entrance of the bacillus communis coli. It is of great interest and importance to note the observations of Naunyn on individuals affected with gall-stones who died

suddenly. He found the epithelium of the gall-bladder to contain fat drops and a myelin-like substance. From some of these myelin-laden cells little masses protruded, which, becoming detached, were found to consist of cholesterine crystals. These he regarded as rudimentary gall-stones; other harder masses of similar composition had already developed into small calculi. Whenever this development of calculi from cholesterine masses was observed he always found minute stones containing a nucleus which consisted of bilirubin and calcium; these latter, it appears, are also associated with swollen epithelial cells, which break down into small granular masses and finally become surrounded by a deposit of cholesterine.

Of the causes located in the bile, Frerichs looked upon bile stasis as a cause, and believed that it resulted in decomposition of the bile salts and an acid reaction, with a precipitation of the cholesterine and bilirubin; these remaining in the gall-bladder caused a cystitis, a condition wherein the mucous membrane of the gall-bladder secretes calcium carbonate, which combines with the ingredients already mentioned and thus forms gall-stones.

This theory is rather disproved by the fact: first, that bile is sterile; second, no such chemical change is possible in the bile as it exists in the gall-bladder; and third, decomposition of bile and an acid reaction in consequence of exposure to atmospheric germs has not resulted in a precipitation of the ingredients already mentioned.

Of the causes located in the liver tissue nothing is known. In fact the lesions found in connection with gall-stones are to be regarded as effects.

If we will now consider the various causes of gall-stone formation, which necessarily involves more or less repetition, we are tempted to look upon Naunyn's observations as conclusively proving that the direct cause of gall-stone formation is located in the gall-bladder. I cannot assume this view as consistent with pathological processes, because there can be no change in the gall-bladder without an irritating substance, and it is only reasonable to suppose that the exciting cause is to be found in the bile itself. In order to support this opinion I will call attention to calculi formed in the pelvis of the kidney. From all that is known up to the present time, renal calculus is always due to an excess of some urinary constituent, such as urates, cystin, oxalate of lime, phosphates, etc. In excess these undoubtedly cause the so-called "calculus-forming catarrh" in the pelvis of the kidney; moreover, experience has demonstrated the existence of a certain diathesis which precedes or comes hand in hand with renal calculus; this tends to support the belief that there is an excess of some urinary ingredient.

I make this comparison in order to advance the theory that the primary cause of gall-stone formation, barring foreign bodies, is due to an excess of bilirubin and cholesterine, or to a diminished quantity of sodium salts and bile acids. I also believe that the excess or deficiency may be confined to any one of the essential constituents of bile, and just as an excess of urates or oxalates may cause a pyelitis, so an excess of cholesterine may cause a calculus forming catarrh in the gall-bladder, and give rise to the condition so well described by Naunyn, which undoubtedly plays the most important part in gall-stone formation.

It is impossible to say what changes in the human economy underlie an excess of essential bile constituents, and this is rendered more difficult when we consider that it affects individuals under all circumstances—the sedentary as well as the active, the glutton as well as the abstemious liver.

This brings me to the symptomatology of cholelithiasis; and since it is so varied and different in a series of cases I will place some stress on the symptoms as they are observed in connection with certain shapes of calculi. The most common and readily diagnosed cases are those where the gall-bladder contains the small, smooth, faceted calculi, which consist of bilirubin-calcium and a large proportion of cholesterine, etc. These may, as has been observed in autopsies, lie dormant in the gall-bladder and never give rise to symptoms. This is generally observed in old people, and may be accounted for by the fact that the gall-bladder's contractility is considerably lessened by certain pathological changes that accompany old age.

The symptoms of this class of cases ordinarily manifest themselves after a heavy meal, jolting in a buggy, or in consequence of sudden physical exertion, and begin with a violent, sudden, paroxysmal, and colicky pain in the epigastric or right hypochondriac regions, which radiates to the lumbar regions, right shoulder-blade, cardiac region, and sometimes to the opposite side. Owing to the intensity of the pain the pulse becomes weak, the skin is covered by a cold perspiration, there is a feeling of oppression across the chest, there may be nausea, and sometimes vomiting, which generally becomes biliary; this condition of shock may be accompanied by epileptiform seizures and syncope; the latter has proven fatal. Within twenty-four hours after the onset of the attack jaundice develops, which first appears in the sclerotic of the eye and rapidly involves the skin of the whole body. Coincident with this jaundice the urine contains bile pigments, it usually deposits an abundance of lithates, and the fæces are acholic. Palpation of the gall-bladder always reveals tenderness, which persists for two or three days, and sometimes longer. Owing to the tenderness it is generally impossible to feel the gall-bladder. The pain ceases suddenly, which signifies that a calculus has passed through the common duct and entered the duodenum, or has fallen back into the gall-bladder.

Examination of the fæces during a number of consecutive days will bring to light the presence of one or more faceted calculi. I wish to emphasize the importance of properly examining the fæces a number of days after the attack; the reason for this precaution becomes apparent when we consider that foreign bodies may remain in the intestines two or three weeks, and I do not see why gall-stones should be an exception to this fact. The gastric disturbance gradually diminishes in the course of a few days; with the cessation of jaundice and returning appetite the patient resumes his daily duties. Generally more or less gastric disturbance, always manifested by a tendency to gaseous distention, eructations, anorexia, and often constipation, remain to remind the victim of his illness; in fact, this latter condition may be so persistent that the patient gradually becomes exhausted, loses in weight, and is rendered unfit to fulfil ordinary mental and physical exertions; this condition I look upon as a strong indication for operation.

The colics may be of daily occurrence, or months and years may elapse before any more make their appearance. In typical cases calculi will be passed with the colics. The number that may be passed varies from one to several hundred.

The diagnostic features of these cases are: 1. Colicky, sudden, and violent pain, beginning in the epigastric or the right hypochondriac regions, and radiating to the lumbar, cardiac, and hypochondriac regions. 2. Tenderness on pressure over the dividing line of the epigastric and right hypochondriac regions. 3. Jaundice following the colic. 4. Bile in the urine. 5. Acholic fæces. 6. Calculi in the fæces. 7. History of previous attacks. 8. Palpation of gall-bladder may reveal the presence of calculi. All except tenderness and tumor may be absent.

These are the typical cases where a diagnosis is readily made. I shall give a few histories:

Case I.—Mrs. A——, aged twenty-nine; two children; history good; was suddenly seized with hepatic colic, with all the symptoms already given. The colics appeared every three or four days, each one accompanied by the passage of small faceted calculi. This condition existed six weeks, during which she passed twenty-four calculi, and then recovered fully. It is now five years since her illness, and there has been no return up to date.

Case II.—Merchant, of temperate habits and well nourished, had attacks of colic during a period of five years; not oftener than every two or three months. Calculi were passed each time, with typical concomitant symptoms. He refused an operation, and during one attack the duct ruptured. An operation performed by Dr. J. B. Murphy verified the diagnosis; the patient died.

Case III.—Colics had existed for a period of eight years. They occurred after long intervals at first, but finally became so frequent that the patient was forced to a life of invalidism. All the concomitant symptoms were present. The patient passed over two hundred calculi, one of which finally became impacted in the common duct, intensifying all the symptoms, with complete jaundice and a severe degree of cholæmia. There was no distention of the gall-bladder in this case. Dr. Parkes (deceased) performed the operation of cholecystotomy and found the duct thickened and obstructed by a calculus. The patient died on the third day after operation.

I wish also to call attention to cases where the symptoms persist two or three months. They are accompanied by a decided tenderness and increased resistance in the right hypochondriac region, increase in temperature of from two to three degrees, complete anorexia, intense jaundice, and daily colics.

Case IV.—In this case this condition was noticeable. She recovered after three months' illness and then had attacks of hepatic colic only four or five times in three years. I attended her and witnessed three attacks of hepatic colic which were accompanied by all the concomitant symptoms. Seven calculi were passed. Examination revealed the presence of a resistant, illy-defined, and tender mass in the region of the gall-bladder. I advised operation, to which she consented. Dr. J. B. Murphy operated, assisted by Dr. Lee and myself. The gall-bladder was found to be contracted, and surrounded by a mass of connective tissue with firm adhesions. Thirty-two calculi were removed, and the long button was introduced and removed on the seventh day. She made an uninterrupted recovery.

Case V.—The history corresponded to that of the fourth case. She had hepatic colics for ten years. Two years ago, in 1892, she was confined to bed for a period of four months with daily attacks of hepatic colic, and a constant pain and tenderness in the right hypochondriac region; she also had chills and fever, with decided gastric disturbances, such as nausea, vomiting, constipation, and anorexia; these, together with decided jaundice and cholæmia, made the case a serious one. She always passed calculi after one or more hepatic colics. When I saw her, in 1894, she had had colics ten days, and passed only three faceted calculi. The gall-bladder could be distinctly felt and was tender on pressure. Operation by Dr. J. B. Murphy. Found a purple, congested, and moderately distended gall-bladder; finding that it remained in the incision without support, a tampon was introduced and removed on the eighth day. I then incised the gall-bladder, and in the course of a week removed three hundred and eighty-five calculi of the bilirubin-calcium variety. No bile escaped through the incision, leading me to believe that the cystic duct was obstructed by calculi. She is recovering at the present time.

I cite these two cases because both give a history of prolonged disturbance covering a period of three months, during which time the pathological changes already mentioned must have taken place. To recognize this condition would assist in arriving at a conclusion when the question of an operation presents itself.

Differential Diagnosis.—In renal colic the pain begins in the lumbar region and radiates down into the thigh, testicle, and hypogastric region. After an attack the urine contains blood and pus. Concretions may also be passed. In the absence of urinary changes the history of the case will reveal the occurrence after active and passive motion, and there will also be vesical tenesmus. Tenderness over the kidney will invariably be present; finally, the absence of jaundice, bile in the urine, and acholic fæces will make the diagnosis positive. Here I will interpose the possibility of a renal and hepatic colic being present at the same time; and can best illustrate this occurrence, by citing the history of a case which I witnessed in my own practice:

A lady, aged thirty four, married, gave a history of four weeks' illness with symptoms of nausea, vomiting, chills and fever, vesical tenesmus more or less constant, and violent colics every three or four days, followed by a moderate jaundice. Physical examination revealed the presence of a movable kidney, which was tender on pressure; the gall-bladder was tender, but could not be felt; fæces were acholic. The urine contained bile, lithates, and pus-cells; no albumin nor sugar, and was diminished in quantity to about twenty-two ounces in twenty-four hours. I observed several colics, and found the first to be an hepatic colic which gradually terminated in a nephritic colic, or a violent boring pain in the right lumbar region, accompanied by vesical tenesmus. After such an attack the urine contained bile, pus, blood, indican, and was diminished in quantity. The final outcome of this case was favorable, recovery being complete after the passage of two cholesterine calculi.

Intestinal colic may be differentiated from hepatic colic by the following symptoms: 1, Pain begins in the umbilical region; 2, pressure relieves the pain; 3, pain is distinctly intermittent; 4, there may be tympanites, or contraction of the abdominal muscles; finally, the seat of the pain is an important differential symptom; and the absence of hepatic disturbance will establish the diagnosis.

Carcinoma of the pancreas should be considered, because there are cases where the common duct has been obstructed and given rise to decided jaundice, bile in the urine, and dropsy of the gall-bladder. The symptoms are: 1, Rapid emaciation and cachexia; 2, occasionally the nodules can be felt; 3, there may be fatty stools; 4, the jaundice is persistent, and there is no history of hepatic colics, which fact would materially aid in removing the diagnosis of gall-stone occlusion of the common duct. Absolute differential signs are: 1, The presence of a fixed tumor in the umbilical region; and, 2, the concomitant symptoms which always accompany carcinoma.

Catarrhal jaundice is readily diagnosticated from cholelithiasis by gastric disturbances followed by a jaundice, which remains more or less constant from two to six weeks; it is accompanied by temperature and sometimes chills; finally, it is never accompanied by hepatic colics and the passage of calculi The history is important.

Acute appendicitis begins suddenly with a sharp pain in the epigastric region, nausea, chills, and temperature, sometimes diarrhœa. Finally, in a short time pain becomes localized in the right iliac region, with decided tenderness, local tympanites, increased resistance, and an indurated mass makes its appearance in the right iliac region. Appendicitis can be diagnosticated from hepatic colic: 1, By the previous history of the case; 2, by the absence of jaundice, acholic fæces, and bile in the urine; 3, the tenderness in hepatic colic is generally (though not always) most marked in the region of the gall-bladder. It is oftentimes difficult to make a differential diagnosis. I had a case recently, where the patient was seized suddenly with acute and violent pains in the right hypochondriac and iliac regions, with nausea, vomiting, and a temperature ranging from 100° F. to 102 5° F. There was obstinate constipation. I saw the case about four days after the onset, and found the following condition: A large, fixed, indurated, extremely tender mass in the right iliac region, extending upward toward the liver; there was decided tenderness over McBurney's point; the bowels had resisted all efforts at evacuation, which, together with the persistent vomiting, indicated bowel obstruction. Here, then, the symptoms of appendicitis were well marked. She gave a history of having had periodical attacks of gastralgia for ten years or more, not

accompanied by jaundice or any conclusive sign of cholelithiasis. A closer examination disclosed that the tumor in the right iliac region had a round shape, and extended upward toward the liver; it was resistant and fluctuating. From the shape, size, and apparent origin of the tumor, as well as the bodily temperature and chills, together with the previous history, I diagnosed impaction of calculi and suppuration in the gall-bladder. With the assistance of Dr. Lee I performed a cœliotomy, and found the tumor already described to be the gall-bladder intensely distended. Suspecting its contents to be purulent, I adopted the procedure of placing an iodoform tampon in the incision, taking care to properly place the peritoneum in contact with the gall-bladder. Ten days later I incised the gall-bladder, evacuating twenty-five large biliary calculi, and about ten ounces of pus; I introduced a large drainage-tube. About two weeks later ten large calculi were removed, which, I believe, had been encysted somewhere in the gall bladder. Bile flowed through the tube immediately after the operation, and all symptoms of bowel obstruction disappeared. The obstruction was undoubtedly due to the large size of the gall bladder and pressure on the intestines. The progress of the case was favorable up to the eleventh week, when she became comatose and died in four days, with symptoms of cerebral abscess.

This brings me to the consideration of gastralgia. The importance of properly understanding what we mean by gastralgia becomes very apparent when we recall the similarity between it and hepatic colic; indeed, it appears to me that it is oftentimes a decided symptom of cholelithiasis. Gastralgia, pure and simple, is typical neuralgia, and generally makes its appearance after prodromal symptoms, such as gastric disturbance, neuralgic pain in other parts of the body, and general lassitude. The pain comes on suddenly, is intensely acute and paroxysmal, of a boring, lancinating, and burning character; it always begins in the epigastric region and radiates to the shoulder blades, hypochondriac, and umbilical regions. The pulse is weak and sometimes irregular; the skin is covered by a cold perspiration, the abdominal muscles are generally contracted, and pressure relieves the pain. There may be concomitant pains in other parts of the body. This condition may last from a few minutes to several hours or days. The urine may be diminished in quantity, or be very abundant when hysteria is a causative agent. There may be nausea, and sometimes vomiting terminates the attack. The symptoms of gastralgia will vary with the cause or causes. It occurs in conjunction with menstruation, gouty diathesis, ulcer of the stomach, carcinoma, malaria, nervous lesions, displaced kidney, etc. Since gastralgia is a symptom of so many lesions it becomes apparent that a process of diagnosis by exclusion must be adopted, and this applies with special force to cholelithiasis.

I shall have to base the description of gastralgia as it occurs in cholelithiasis on cases in my own practice. The attacks were extremely irregular, and rarely appeared oftener than once every two or three months; or a series of attacks covering a period of three or four years were noted, when they disappeared and did not return for several months.

I have noticed that they become more frequent when the pathological changes in the gall-bladder, such as thickening and contraction, are far advanced. Gastralgia occurs most frequently where the calculi are too large to enter the common duct; naturally the symptoms of bile obstruction, such as jaundice, bile in the urine, and acholic fæces, are always lacking in this class of cases. Here gastralgia and a very persistent gastric catarrh, which usually resists treatment, are the prominent symptoms.

In every case of cholelithiasis where this symptom was present, I observed that the pain commenced in the epigastric region; it was intensely acute and always accompanied by signs of shock. Local examination showed marked tenderness in the region of the gall-bladder, most acute during and immediately after the attack; it generally subsided and almost disappeared in three or four days. This symptom I have never found in these cases. I believe the pain is due to irritation of the opening at the cystic duct. Recently I introduced a blunt sound into the gall-bladder where cholecystotomy had been performed. The moment the sound entered the cystic duct the patient complained of acute pain in the epigastric region, which immediately ceased when the instrument was withdrawn. The injection of sterilized water into the gall-bladder, with slight force, elicited the same pain, or reflex gastralgia.

I will now cite a few cases wherein gastralgia was a prominent symptom:

Case I.—Married lady, has several children, and no history of lesions, except chronic gastric catarrh and gastralgia. These attacks had appeared about five or six times a year, but more frequently in the last year, and led her to consult Leube, of Germany, who made the diagnosis of gastralgia. In 1888 I was called to relieve an attack. She had a violent pain in the epigastric region and marked tenderness over the gall-bladder. The attack lasted four days, and was accompanied by a very slight jaundice, most noticeable in the sclerotic coat of the eye. There was no bile in the urine, and the fæces, which were thoroughly examined, were normal. There was an apparent enlargement in the region of the gall-bladder. Dr. Parkes (deceased) operated and removed two large calculi from the contracted and thickened gall bladder. She made an uninterrupted recovery.

Case II.—A well-nourished, married lady was suddenly seized with a violent attack of gastralgia accompanied by vomiting and obstinate constipation. The history revealed chronic gastric disturbance and attacks of chronic gastralgia every three or four months; she never had jaundice, bile in the urine, or acholic fæces. Local examination revealed the presence of a tumor which extended downward from the liver into the right iliac region, and backward into the right lumbar region. It was tender, fixed, rounded, fluctuating, and very resistant. Urine was diminished in quantity and deposited lithates in abundance. There was no bile in the urine, no jaundice, and no acholic fæces. Constipation was obstinate. The tumor was immobile, and apparently separated from the liver by a distinct depression. On account of its apparent origin in the right lumbar region I suspected a nephritic tumor, though the history did not justify this belief. Dr. J. B. Murphy made an exploratory incision and found a distended gall-bladder of a dark-red color, which was apparently œdematous. Calculi were felt, and a large sized Murphy button was used to make an anastomosis with the duodenum. Seven or eight days after the operation two calculi were passed per rectum; the largest measured one inch in its longest diameter, its shortest seven-eighths of an inch. The smallest measured seven-eighths of an inch longest diameter, and three-fourths of an inch short diameter. The button was passed on the eighteenth day. The operation was performed October 7, 1892. The patient has been perfectly well and free from all physical ailment up to date.

Case III.—Mrs. C——, married, illy-nourished; has had three children. History gives the following symptoms: Chronic gastric catarrh for twelve years; attacks of violent gastralgia about every three months; each attack lasted about four days. One physician advanced the opinion that she would not survive another attack. This state of affairs, coupled with a severe degree of atonic dyspepsia, brought about an extreme degree of anæmia, emaciation, and inability to perform ordinary housework. She had never had jaundice, bile in the urine, acholic fæces, and no calculi were passed. I observed her in two attacks of gastralgia. The pain was intense and distinctly located in the epigastric region, and radiated to both hypochondriac and lumbar regions, with syncope, a very small and weak pulse, and cold extremities. Morphine always gave relief. Local examination

revealed acute tenderness in the region of the gall-bladder, which could not be felt on account of tenderness. In four days the pain had ceased, no concomitant signs of gall-stones were noticed. At a second examination I found both kidneys movable and displaced. She had never had renal colics, and the urine presented no evidence of kidney lesion.

(It is said that gastralgia is often due to a movable kidney. This I have not observed in a series of nineteen cases. To be sure, there are reflex gastric disturbances of a neurotic type, but I have yet to see gastralgia due to movable or displaced kidney.) Pushing the right kidney back I felt a small, resistant tumor in the region of the gall bladder, which moved with respiration. Repeated examinations always resulted in finding this tumor. After the exclusion of other abdominal lesions, I made the diagnosis of cholelithiasis. Dr. Murphy examined the patient and agreed to the diagnosis Dr. Murphy removed two calculi—as large as nutmegs—from the gall-bladder, which was thickened and had contracted down around the calculi, thereby forming a distinct sac for each calculus—giving it the appearance of an hour-glass. Anastomosis was made with the duodenum by means of the Murphy button. The progress of the case was interrupted by an attack of acute dry pleuritis on the tenth day, which subsided rapidly and terminated in acute bronchitis. The button was passed on the twentieth day. The patient has been well since the operation. Her appetite has returned and the gastric catarrh underwent rapid improvement.

This completes a synopsis of three cases, wherein the gall-stones were as large as nutmegs, and gave rise to attacks of gastralgia, cholecystitis, constant gastric disturbances peculiar to chronic gastric catarrh, constipation, and general physical debility in consequence of defective digestion. The indigestion was not limited to any particular kind of food; indeed all foods, either liquid or solid, caused distress. Therapeutic remedies gave only slight relief.

The indications for operation in these cases were: 1. Gastralgia. 2. Persistent gastric disturbance. 3. Emaciation and physical exhaustion. 4. The possibility of complications, such as carcinoma and suppurative lesions. 5. The safety of operative procedure, and the improvement of health that invariably follows.

I also wish to report two other cases of cholelithiasis wherein the calculi were large, polyhedral and tetrahedral in shape, with large, smooth, faceted sides.

Case I.—Had been ill for a period of twelve years, with the following symptoms: Constant gastric disturbance, anorexia, general debility, exhaustions, and emaciation. She gave a history of having had one distinct hepatic colic, and claimed that she passed some small sand-like concretions. She never had jaundice, and according to her own statement no bile in the urine or acholic fæces. She also gave a history of slight chills followed by fever. The most constant symptom was pain in the right hypochondriac region whenever she worked in a stooping posture, or simply stooped. During all this time there was habitual constipation.

Local examination revealed the presence of a pear-shaped, smooth, and painful tumor in the region of the gall bladder. It moved synchronously with respiration, and could not be fixed by holding it between the two hands, something that always can be done with a movable kidney. It could be moved slightly from side to side, and since it appeared to be distinctly connected with the liver, and located in the region of the gall-bladder, as well as its smooth, globular shape, I made the diagnosis of gall-stone impaction. Dr. Murphy operated. Upon incising the gall-bladder a puriform fluid made its appearance and several calculi of the shape already described made an escape through the opening. Anastomosis with the duodenum was made by means of the Murphy button. Owing to the carelessness of the nurse I was handicapped in making thorough examinations of the stool after the operation; at all events the patient made a good recovery, gained in weight, regained her appetite, and was able to attend to her household duties when I last saw her. It is now over a year and a half since the button operation was performed.

Case II., which I mentioned in connection with appendicitis, gave a history of attacks of gastralgia every four or five weeks, but sometimes months elapsed before an attack made its appearance. Every attack was instantly relieved by vomiting. She had never had jaundice, bile in the urine, or acholic fæces. Here the calculi were unusually large; there were thirty-five, three of them were rounded and almost as large as nutmegs, the rest were of the same shape already described.

The details of this case have already been mentioned.

Among the cases of interest, I have in mind two where the calculi consisted of cholesterine entirely. One I have already mentioned in connection with renal colic, and therefore will not repeat it. The second case occurred in a lady, aged fifty-five years. She gave a history of having had colics five or six years, not oftener than once every three or four months. All the concomitant symptoms, such as bile in the urine, acholic fæces, and jaundice, followed the colics. When I saw her she had been sick two weeks. There was moderate jaundice, a large quantity of bile in the urine, acholic fæces, and colicky pains had persisted steadily, the constant use of morphine being necessary to subdue the violence of the pain. Beyond tenderness localized in the region of the gall-bladder, nothing abnormal was found in the abdominal cavity. Considering the history, the occurrence of jaundice within twenty-four hours after a decided hepatic colic, the constant presence of bile in the urine, and acholic fæces, together with the persistent colics, I diagnosed obstruction of the common duct, and recommended operation. Dr. Murphy operated, assisted by Drs. Lee and Hartmann and myself. The gall bladder was normal and contained no calculi. The cystic and common ducts were so obstructed by calculi that they felt like a string of beads. Dr. Murphy made an anastomosis with the duodenum, using his button for this purpose.

The colics ceased immediately after the operation. On the sixth day three round, semi-transparent cholesterine calculi were passed, each one about three sixteenths of an inch in diameter. These were passed without pain or colics, which substantiated Dr. Murphy's opinion, "that the calculi would fall back into the gall-bladder after the anastomosis was made."

On the seventh, eighth, and ninth days more calculi were passed, making a total of thirteen pure cholesterine calculi which had obstructed the bile ducts. The patient passed the button on the twentieth day after the operation, and never had an unpleasant symptom since. It is nearly a year since the operation. Here the Murphy button operation was certainly superior to the more difficult and dangerous procedure of cholecystotomy.

Owing to the rarity of pure calcium calculi in the gall-bladder, I shall give the history of one of two cases which I observed.

Mrs. X——, aged thirty-six, married, had never been sick and gave no history of hepatic colics. In 1888 she was suddenly seized with a distinct hepatic colic, followed within twenty-four hours by all the concomitant symptoms of cholelithiasis, such as jaundice, bile in the urine and acholic fæces. Local examination revealed tenderness in the region of the gall-bladder, which organ could not be felt. The hepatic colics were intense and continuous for a period of three weeks. During this time there was nausea and vomiting, and rather decided cholæmia. Finally, at the end of three weeks, I found an irregular, rather hard, white calculus in the fæces, which consisted almost entirely of calcium. Following its appearance the patient made a rapid recovery, and has had no recurrence up to the present time.

The other case resembled this in all respects.

It will be observed, from the histories given, that the classical symptoms of cholelithiasis, such as jaundice, bile in the urine, acholic fæces, and the passage of cal-

culi, were lacking entirely in five cases, and one case gave a history of twelve years' illness with only one distinct colic. These facts render a diagnosis extremely difficult, and sometimes impossible. The symptomatology therefore deserves special attention. In these five cases the most constant symptoms were gastric disturbance, such as gaseous distention, nausea, fermentation of foods during digestion, a constant sensation of pressure and slight pains in the epigastric region, and constipation. This condition may be so marked that the patient becomes emaciated, exhausted, and unable to perform ordinary physical exertions. This, together with attacks of gastralgia every two or three months, in conjunction with decided tenderness in the region of the gall-bladder during the attacks, completes the picture of subjective symptoms in these cases. A diagnosis by exclusion must be adopted and all other causes of the symptoms mentioned eliminated. Local examination is of the utmost importance, and must be practised in a suspected case. Where the calculi are large and patience is used, one can often feel a distinct rounded enlargement in the region of the gall-bladder, which is slightly tender and moves synchronously with respiration. A tumor in this region must be differentiated from carcinoma of the pancreas, echinococcus cysts, fecal accumulations in the colon, renal tumors, movable and displaced kidney.

In carcinoma of the pancreas we have cachexia, rapid emaciation, and sometimes fatty stools, an irregular tumor deeply seated in the epigastric region, and sometimes metastatic deposit in other organs. The tumor is generally fixed, and on auscultation one may hear a bruit due to transmitted pulsations from the underlying vessels.

When the common duct is obstructed in carcinoma of the pancreas, there will be intense and constant jaundice, bile in the urine, and acholic fæces, coincident with a distended gall-bladder, which can be distinctly felt as a rounded, smooth, fluctuating, and pear-shaped tumor, encroaching on the anterior margin of the liver; sometimes atrophy of liver tissue takes place at the point of contact. This tumor moves with the respiratory movements and is distinctly connected with the liver. In order to determine the cause of hydrops of the gall-bladder in these cases the history is of importance, and in connection with it the symptoms mentioned will make a diagnosis possible. It should not be forgotten that cholelithiasis may also be present.

Echinococcus cysts rarely originate in the region of the gall-bladder. When by reason of extreme size or central origin in the liver they occlude the bile-ducts, we will observe that, first, the jaundice developed without pain; second, it is persistent; third, the gastric functions are generally undisturbed; and fourth, other physical signs of echinococcus cyst would exclude cholelithiasis.

Fecal accumulations in the transverse colon present the following symptoms: An irregular mass, superficial, non-fluctuating, and freely movable, coupled with a history of bowel obstruction, intestinal colics, and constipation. Cases have been observed where diarrhœa was present. The treatment with purgatives will remove all doubts.

Renal tumors, when smooth and symmetrical, may simulate a largely distended gall-bladder to such an extent that a diagnosis is made with difficulty. Renal tumors are of slow development and are always accompanied by changes in the quantity and quality of the urine, which may contain albumin, blood, pus, casts, and be diminished in quantity. There may also be a history of renal colics and vesical irritability. In a large hydrops of the gall-bladder the onset is generally sudden and painful, and by reason of its size gives rise to symptoms of bowel obstruction. This I observed in two cases. The distended gall-bladder is generally fixed, smooth, rounded, fluctuating, and pear-shaped, and very tender on pressure when the distention is acute.

Renal tumors when large are more resistant, have an irregular surface, and generally the colon overlies the tumor. In hydronephrosis the enlargement is smooth globular, and fluctuating, and bears a striking resemblance to hydrops of the gall bladder.

Especial attention must be directed toward ascertaining: 1, A history of sudden increase in the quantity of urine voided and a corresponding diminution in the size of the tumor; 2, diminution in normal quantity of urine; 3, the presence of renal colics and lumbar pains; lastly, it may depend on pelvic enlargements which have occluded the ureter on the right side.

Movable kidney differs from distention of the gall-bladder as follows: 1, It is bean-shaped; 2, it is freely movable and can be replaced to its normal location; 3, it does not move with the respiratory movements; 4, it can be fixed between the hands in spite of the respiratory movements; 5, there may be a history of renal colics; and lastly, there is no history of jaundice, bile in the urine, and acholic fæces. It should not be forgotten that movable kidney and cholelithiasis may exist together. I have given the history of two cases. In case the kidney is displaced and fixed under the liver, the diagnosis is more difficult. Careful analysis of the symptoms and history will always render diagnosis possible.

It is important to mention the physical characteristics of gall-bladders which have become elongated and divided in two or more sacculi, each one containing a calculus. A local examination reveals the presence of a rounded elongated tumor which admits of being freely moved from side to side. It can be traced to the region of the gall-bladder and is attached to the liver. In connection with the history of the case a diagnosis can be made.

This brings us to the complications of cholelithiasis. They are: 1, Obstruction of the common duct; 2, impaction of gall-stones and suppuration in the gall-bladder; 3, hydrops of the gall-bladder; 4, contraction and almost entire obliteration of the gall-bladder, and a deposit of connective tissue with adhesions to the surrounding organs; 5, carcinoma of the gall-tracts; 6, obstruction of the cystic duct; 7, cholecystitis with thickening of the gall-bladder and its division into several diverticulæ: 8, hepatic abscess; 9, rupture of abscess in the colon, kidney, stomach, duodenum, and through the abdominal wall; 10, rupture of the gall-bladder or bile-ducts; 11, obliteration of the common and cystic ducts.

It is not out of place to say a few words about the symptomatology of the complications. Rupture of the gall-bladder or its ducts generally occurs suddenly during an attack of hepatic colic. I can best describe the symptoms of this accident by citing one of two cases which I treated. A merchant, whose case has been mentioned in this paper, was seized with an ordinary hepatic colic; feeling a desire to evacuate his bowels he went to the closet, and while straining felt something give way suddenly. Thereupon the hepatic colic immediately ceased and was replaced by syncope, cold sweats, and a feeling of extreme weakness. Two hours later I saw the patient and found his condition to be as follows: Rapid, weak, and thread-like pulse, cold extremities, dyspnœa, and decided abdominal tympanites; in fact the patient was apparently dying. Dr. Murphy performed cœliotomy in the hope that drainage would save life. The abdominal cavity was full of biliary fluid; the intestines floated on the latter. Death occurred on the third day and an autopsy was refused. The second case was almost identical with the first. An operation by Dr. Murphy substantiated the diagnosis.

When carcinoma of the gall-tracts develops in the course of cholelithiasis the patient rapidly loses in weight, and ordinarily the jaundice becomes intense and persistent, with all the concomitant symptoms of bile obstruction. Local examination reveals uniform tenderness over the gall-bladder and along the liver-margin. Sometimes it is possible to feel carcinomatous nodules which completely obstruct the bile-ducts. The following case will be of interest and serve as an illustration:

Dr. Allaben, of Rockford, Ill., to whom I am indebted for the history, and who referred the patient to me, had

made the diagnosis of cholelithiasis. The case was a typical one, and accompanied by jaundice, bile in the urine, and the passage of calculi after every hepatic colic. Suddenly jaundice developed without a preceding colic, it was persistent and accompanied by rapid emaciation, occasional vomiting of mucus and undigested food. There was no recurrence of hepatic colic. He also had chills and a temperature rising from one to three degrees. This, together with decided tenderness in the region of the gall-bladder and along the liver margin, as well as the presence of a nodular mass in the region of the gall-bladder, completed the picture of this case.

Owing to the intense jaundice and its time of occurrence, as well as the concomitant symptoms, the diagnosis of gall stones with carcinoma and probably suppuration was made. Operation by Dr. Lee found the gall-bladder contracted and shaped like an hour glass. The outer portion contained a large calculus firmly fixed, and consequently it could not be removed. The inner portion contained a greenish puriform fluid. A nodule was also felt. Death followed in twelve hours. Autopsy brought to light what has already been mentioned. The common duct was completely obliterated and surrounded by a carcinoma as large as a hickory-nut. Metastatic deposits were found in the liver and elsewhere.

It is not possible to predict the pathological changes in many cases of cholelithiasis. Sometimes those where the symptoms have been comparatively mild present the most decided pathological changes, and *vice versa*.

We now come to the treatment of gall-stones, which can properly be divided into two classes, viz.: Therapeutic and surgical. It would not be consistent with the present medical knowledge to give the details of every remedy which has been used. Among those which have claimed the greatest attention are such as olive oil, arsenic, iron succinate, the mineral acids, and saline laxatives. It cannot be claimed that any of these, and others not mentioned, act as solvents of gall stones. Moreover, were it possible to dissolve them as contained in the gall-bladder, we would not cure but merely remove the effect of a cause which is yet a mystery. No doubt the medicines are of value in relieving concomitant conditions, such as constipation, gastric disturbance, etc.; thereby temporary improvement is procured. Laxatives probably encourage the elimination of calculi by reason of their action on the intestines and bile secretion. Diet and the regulation of living have a good effect, as they do in other diseases.

Since it would be useless to say more about the therapeusis of cholelithiasis, I will discuss the surgical procedures and the indications for interference. When we would operate, is a question that admits of much argument, particularly so when the patient has been made to believe that this, that, or the other medicine will dissolve the stones. I recall a case where olive oil had been administered; the patient passed a number of soft greenish masses consisting of fatty substances. And lo! the people and others declared that they were gall-stones which were partially softened by olive oil; that mistake is sometimes encouraged by the attending physician.

The indications for operation are: 1. Hepatic colics, coming on every four or five days for a period of several months, with passage of calculi. 2. Obstruction of the common duct by a calculus, with cholæmia and gall-bladder dropsy. 3. Hydrops of the gall-bladder, of acute development, with obstruction of the cystic duct. 4. Persistent gastric disturbances with occasional attacks of gastralgia, physical exhaustion and anæmia, and the presence of tumor in the region of the gall bladder. 5. Suppurative cholecystitis, due to gall stones. 6. Continuous daily hepatic colics, with signs of bile-duct obstruction, and the absence of calculi in the fæces. 7. The possibility of dangerous complications, such as rupture of the gall tract, carcinoma, adhesions, etc. 8. Hepatic abscess, due to gall-stones. 9. Impaction of gall-stones in the gall-bladder. 10. The comparative safety of operative procedures.

Among the operations ordinary cholecystotomy is most generally practised, and with the present methods has given good results. The ideal operation consists in making an anastomosis between the gall-bladder and the duodenum, called cholecyst-duodenostomy. By this method we imitate to an extent the normal physiological conditions, and meet the usual indications of cholelithiasis. The gall-bladder is drained thereby, and the bile flows into the intestine when the cystic duct is not obstructed. There is no fistula left. In my own practice that useful and ingenious contrivance, the Murphy button, has been used four times in making an anastomosis. These cases have been under my observation over a year and a half, and are in the best of health to-day.

I believe that sufficient time has elapsed to demonstrate the safety of the operation as it is done with the Murphy button, and recommend it wherever the condition of the organs will admit of its use.

I wish also to add that the four cases under my observation were of a widely different type. In Case I., the gall-bladder was enormously distended and œdematous; in Case II., the gall-bladder was normal in size, its walls thickened, and contained a purulent fluid; in Case III., normal gall-bladder with calculi obstructing the common and cystic ducts, which subsequently fell back into the gall-bladder; Case IV., thickened and sacculated gall-bladder.

Another point in favor of this operation is the impossibility of a return of gall stones, and the certainty that all the calculi will escape from the gall-bladder.

In cholecystotomy it is possible to leave calculi in the gall-bladder which may occasion considerable trouble. Someone made the statement that the operation of cholecyst-duodenostomy with the Murphy button favored infection of the gall tracts; this is not possible; first, because bile being aseptic and sterile, would to an extent overcome this danger; second, infection with the bacillus communis coli (which is generally found in suppurating lesions of the gall tracts) is harmless when not confined, as has been amply demonstrated by Naunyn.

In any of the cases under my own observation, where the Murphy button was used, no infection occurred.

I wish to add that, up to the present date, I have the reports of thirty-four cases of cholecyst-duodenostomy done with the Murphy button for gall-stones; of this number one died, making thirty three recoveries and one death.

LANDMARKS OF VISCERAL DISEASE, WITH A NEW THEORY.

By BYRON ROBINSON, M.D.,

CHICAGO, ILL.

Useful works on applied anatomy and pathology of the abdominal viscera are very scarce. I do not know any subject in medicine of which the general student and practitioner is so lightly supplied. It must be acknowledged that the abdominal cavity is filled with a complicated mechanism which holds body and soul together; it is the assimilating laboratory of life, the location where food is worked into blood, bone, and tissue. This cavity is less generally known than the cerebro spinal cavity.

In this article I wish to speak of what one sees in opening the abdomen in dead bodies. One has not the right to attempt to study very much on the viscera while laparotomy proceeds. I also think that by disseminating some real, practical knowledge of the abdominal viscera unnecessary laparotomies may be spared. To-day there are too many laparotomies done by unskilled physicians without proper facilities. In speaking of the landmarks of visceral disease I mean the points of the viscera where disease is apt to arise. Probability is the rule of life, and when we find in autopsies that certain viscera and certain localities are liable to show pathological conditions it is wise to look after these same points during life. The comparison of the pathology found in the dead abdomen

with that of the living gives ample rewards to the thoughtful surgeon and physician. The great phenomenon in the dead abdomen which leads one to the origin of disease is peritonitis. Inflammation of the serous sac may refer one back a quarter of a century to events long forgotten, but the "blaze" on the peritoneum, like that of the surveyor on the tree, remains to tell the story of invasion. If one will carefully examine at least twenty-five adult bodies as regards the abdominal viscera he will be liable to observe the main common visceral disease. It will require at least twenty-five autopsies to be impressed with the idea that, after all, visceral disease has a peculiar similarity, a liability to be alike in each body. Visceral disease has common grounds to start on and common organs to attack. It persists in definite localities and has many common symptoms. Visceral disease is much like meals, which are generally composed of a few common articles. Meat, bread, and potatoes are the common articles found in most meals. So, for example, one can find with a similar commonness that autopsies reveal peritonitis in the pelvic, appendicular, and gall-bladder region. On first opening the abdomen one will soon generally observe whether peritonitis has existed by the position of the omentum—the surgeon's friend, the patient's man-of-war. If peritonitis has existed the omentum, or a part of it, will generally be found trying to quell the fire by covering it up with adhesions. The omentum has covered up the infectious invader and buried the slain of the battle. It has guarded the parts where infection is liable to enter. In seventy-five per cent. of bodies the omentum tends to the left and reaches to the pelvis. In some it is rolled up around or behind the transverse colon. Sometimes we find the omentum so thick and large that scarcely a viscus is in sight. Now, there are greater and lesser districts of peritonitis in the abdomen. All peritonitic districts depend on certain weak points of viscera. These peritonitic regions are places where disease arises in viscera, for peritonitis is a secondary matter. The great peritonitic districts are—*a*, the pelvis; *b*, the appendix; and *c*, the gall-bladder. These are the three great regions of peritonitis in man. I have scarcely posted an adult body which has not some trace of peritonitis in one of these three major regions. In these peritonitic districts is where abdominal surgery has made progress and where life has been many a time and oft saved or snuffed out. These three regions have tolerated infectious invasion so long that they resist it and almost always save life by producing a peritonitis which buries the invaders in exudate forever. It must be remembered that peritonitis is a life saving process, while it is infection that kills. Peritonitis is nature's method of repair. If it were not for peritonitis the people would soon be swept from the earth. Peritonitis produces exudates which bury and starve the invading deadly germs. Now, there are other regions of peritonitis which I call minor districts. We have inflammation around the sphincters (pylorus and ileo-cæcal valve and anus), which is common in adults, though limited in extent. Again the flexures of the colon suffer (hepatic, splenic, sigmoid) from inflammation. Peritonitis is common around the colonic flexures. The reason is that as the solid fæces, containing sharp, rough, foreign bodies pass around the acute angles of the flexures the mucous membrane becomes abraded and torn so that the way lies open for germs and infection to pass into the gut-wall and peritoneum. At these sphincters and flexures malignancy as well as cicatricial strictures are apt to arise. The hernial orifices are very apt to catch some portion of the gut and inflame it, starting up peritonitis. Also we have what I designate as accidental peritonitis, *i.e.*, from some perforation or trauma in some portion of a viscus outside of what has been designated as a distinct peritonitis district (major or minor).

What I wish to present in this paper as original, as I have never seen it in a book nor heard it from anyone, is the peculiar inflammation or peritonitis which occurs around the cæcum and under the sigmoid, as it crosses the psoas muscle. For a long time in autopsies I have been carefully observing local peritonitis, and particularly my attention has been called to two points whose explanation did not seem satisfactory. The peculiar, apparently benign inflammation which one can so frequently see around the cæcum, and just under the sigmoid as it crosses the psoas muscle, cannot be wholly due to appendicitis nor to the acute angle of the sigmoid. First, the pericæcal adhesions are entirely out of reach of the appendix. In fact, it is the most distant from it. I admit that the appendix is often movable and may create inflammation in a locality and then leave it to lie in another region. But physical circumstances were such in many cases that it appeared unreasonable that the appendix could produce such old adhesions. Really there is a kind of pericæcal adhesion and a kind of appendicular adhesion. These kinds of adhesions may be totally separate and distinct by physical spaces. Now, how do I account for the inflammation around the cæcum which is not appendicular? The answer is that it is due to the relaxation and contraction of the psoas and iliac muscles. The majority of cæca lie partly on the psoas muscle and partly on the iliac muscle, and in walking these two muscles are continually contracting and relaxing. Should the cæcum be congested or even inflamed the irritation produced in these muscles would cause an exudate which would organize and result in bands. Again, as the sigmoid crosses the psoas on the left side, I have seen the peritoneum or its mesentery inflamed so often that I looked a long time for a cause. The cause, in my opinion, is due to the contraction and relaxation of the psoas and iliac muscles. This is a clearer case than the cæcal region, for the old peritoneal inflammations are so frequent and entirely isolated from all other fields and sources of inflammation. The old bands, dense adhesions, and thick, new cicatricial tissue so frequently found just under the sigmoid as it crosses the psoas muscle can be accounted for, so far as I can see, only by an irritation arising out of the psoas and iliac muscles. It must be chemical or mechanical peritonitis due to irritation. This explanation will give a new view to all the isolated adhesions around the cæcum as not being due to rupture of the appendix.

In nineteen autopsies made by me in special reference to the abdominal viscera, where every point was observed in regard to peritonitis and an attempt made to measure almost every viscus, I found over seventy-five per cent. of old adhesions resulting from peritonitis existing around the cæcum. I can say that many of the adhesions were entirely isolated from the appendix. In the same autopsies we found thirteen cases out of nineteen with distinct old peritonitic adhesions under the sigmoid as it crosses the psoas muscle. In many cases the peritonitic adhesions under the sigmoid were entirely isolated from all other fields, and many were in men, so that the tubal end could not empty its infection there, just exactly on the psoas, immediately under the sigmoid bend.

It cannot be explained by the flexure in the sigmoid, for it is not sharp enough. In these very cases the sigmoid was almost straight over the adhesions, and therefore could not become angular. When Albers, of Bonn, said, over two generations ago, that the cæcum was the disturbing element in man's trouble in the right iliac fossa, he had a grain of truth on his side, for there do exist old adhesions around the cæcum separated from the appendix which do not appear connected with the appendix. It must not be forgotten that about all fatal pathology lies in the appendix. I am mathematically investigating one hundred cases of autopsies on the abdominal viscera. So far I have done with as much care as possible nineteen autopsies of this proposed one hundred, and many interesting revelations have arisen. Further investigation will either confirm or deny this theory.

The Death-rate of Montreal has fallen from 37 per 1,000 in 1872 to 24 per 1,000 in 1892.

ELECTRIC LIGHT AS A DIAGNOSTIC AND THERAPEUTIC AGENT.[1]

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The attempt to illuminate the less accessible cavities of the human body had its origin as long ago as the beginning of the present century. Bozzoni, in 1805, first conceived the possibility of throwing light into the bladder, but without much success. In 1853 Desormeaux exhibited the first endoscope before the Paris Academy of Medicine. Julius Bruck, of Breslau, is said to have first employed the platinum loop as a source of illumination for medical work. In 1867 he exhibited a stomatoscope designed to assist in examining the rectum and bladder. These old instruments were cumbersome and inefficient, but Nitze and Leiter have constructed a cystoscope which has achieved remarkable success.

The use of the electric light in medicine now covers a much larger field and has become an important aid in diagnosis. By it the dentist can detect spots of decay in the tooth which without it would escape his observation. The nose and throat specialists are able to search the minutest recesses, while the physician who is in doubt regarding certain diseased conditions of the stomach and abdomen, may literally study his obscure cases in a new light.

In 1885 Dr. Louis J. Lauterbach, of Philadelphia, published an account of the use of the incandescent electric light in examinations of the eye, ear, and throat. He recommended for illumination of the ear the use of a tiny lamp placed close to the speculum and enclosed in a shield having a small circular opening in it.

In 1890, Theodor Heryng was able to illuminate the antrum of Highmore by using a five-volt incandescent lamp attached to a tongue depressor. He was able in more than thirty cases to diagnosticate latent empyema without exploratory puncture, and this diagnosis was corroborated by the subsequent removal of the pus.

About two years ago Davidsohn called attention to the value of illuminating the eyeball by an incandescent lamp in the mouth. Quite recently Burger has claimed that luminous sensations in the eyeball were far more distinctive tests than illumination, as a very feeble light was sufficient to excite the subjective sensations.

On November 1, 1893, the writer had the pleasure of demonstrating this point to a number of medical persons by introducing an incandescent lamp into the mouth. On the lamp being illuminated the pupils of the eyes were seen as blood-red apertures, and it was also shown that if the person so illuminated cast his eyes upward at an angle of 45° he could discover the same phenomenon. Mr. N. Stevenson has called attention to the curious fact that when light is thus introduced the pupils do not contract.

Dr. D. Braden Kyle, of Philadelphia, has recently introduced some improvements for examining the nasal cavity. The essential feature of his method is the placing of the lamp within the post-nasal space so that the parts are seen by direct instead of by reflected light. He also recommends that the lamp be protected with a cap of aluminum, by the aid of which it can be used continuously for thirty seconds without inconvenience from heat. This lamp was furnished by Charles Leutz, of Philadelphia.

Within the past few months Dr. Charles W. Caldwell has published an article in which he has considered the subject of transillumination of the mastoid cells as a means of diagnosis of mastoiditis interna suppurativa. The examination must be made in a perfectly dark room. When the lamp is inserted well into the external auditory meatus and the current turned on, the healthy mastoid is illuminated with a red glow, extending from the apex to the lateral sinus and to the limits of the cells above. By placing the lamp on different parts of the mastoid the limitation of the cells and the position of the lateral sinuses may be accurately mapped out, and pathological conditions demonstrated if present. If there is a purulent condition in the cells this portion will appear dark. Comparison with the opposite healthy side renders the diagnosis of pus in the mastoid cells complete, whether or not the usual symptoms are present.

The same observer has also described a method of transilluminating the accessory sinuses of the nose, by which he was able to detect a large mucous polypus by its translucency, higher refraction, and globular form, which concentrated the light, and increased the brilliancy of the illuminated area.

Dr. Chevalier Jackson, of Pittsburgh, has also practised transillumination of the nose successfully for some time past. His method differs somewhat from that previously described, as he uses a fifty-candle-power lamp and a hollow silvered glass rod.

As an instance of the great clinical value of electric illumination in diseases of the nose and throat a case of tubercular laryngitis has been reported in which no tubercle bacilli could be found in the expectoration, but on passing an applicator deeply down into the passages under the guidance of a brilliant electric light, some secretion was found, which on removal proved to contain innumerable tubercle bacilli.

The work of Dr. Max Einhorn in connection with the transillumination of the stomach is well known. His "gastrodiaphane," first described in November, 1889, consists of a soft rubber stomach tube containing wire conductors and having a small Edison incandescent lamp mounted at the gastric end of the tube. By its aid the examination is performed so quickly that there is no danger of the lamp becoming too hot, especially as the water in the stomach (swallowed by the patient just previously) exerts a cooling action upon it. Dr. D. D. Stewart, in the *Medical News* for February 18, 1893, speaks of the value of gastrodiaphany as follows: "The actual utility of gastrodiaphany over other methods of outlining the stomach lies especially in the application of the diaphanoscope to the differentiation of gastroptosis and gastrectasia, as by it the determination of the site of the lesser curvature is far more readily made than by inflation."

Theodor Heryng has succeeded in transilluminating the anterior walls of the vagina. With the help of a Ferguson speculum he was also able to insert an electric apparatus into the rectum and so transilluminate the posterior wall of the vagina as far as the posterior fornix.

With reference to apparatus, it is a matter for regret that much of the intended experimental work has not been done on account of the great difficulty experienced in securing suitable lamps.

The W. F. Ford Surgical Instrument Company have furnished a lamp for transillumination of the frontal sinuses, also one for the transillumination of the antrum of Highmore, and a head lamp. The Galvano-Faradic Manufacturing Company have furnished a small mouth lamp for general use. The use of a lamp has also been secured for the transillumination of the bowel, known as Hertyng's lamp, and a lamp for the transillumination of the pelvic tissues devised by myself. These lamps have all been personally tested, with the following results:

Ford's head lamp requires 10½ volts and 1 ampère, and gives 3-candle power. For use with a street current, it should be placed in circuit with one 16 and one 24-candle-power lamp. Ford's lamp for the transillumination of the frontal sinuses requires 8 volts and .8 ampère and gives about 2-candle power. For use with street current two 16 candle-power lamps should be placed in circuit. Ford's antrum lamp requires 8 volts and .8 ampère and gives a little over 2 candle power. For use with the street current, one 16 and one 24 candle-power lamps are needed. The lamp supplied by the Galvano-Faradic Company, requires 5½ volts and .8 ampère and

[1] Read before the American Electro-therapeutic Association, September 27, 1894.

gives a little over 1-candle power. For use with street current it requires two 16 candle-power lamps in circuit. Hertyng's lamp for transillumination of the bowels has a shield or cap over it with an attachment to a fountain syringe so that water is allowed to flow about the lamp and also through the terminal opening into the bowel itself. It requires 9 volts and .7 ampère and gives a little over 2 candle power.

The lamp for the transillumination of the pelvic tissues, devised by myself, requires 32 volts and .8 ampère, giving about 8-candle power. It was intended to be a 20-candle-power lamp, but as it passed through a chapter of accidents, it is at present only an 8 candle power, but will be replaced shortly by one of 20 candle power. The lamps variously used and the results obtained from them have already been indicated in the report. The Edison lamp or condenser for direct illumination of the different cavities of the body has also been tested. It is best suited to positions in which the direct rays of light may be used and is also satisfactory where the light has to be reflected.

So far as the transillumination of the bowel is concerned, nothing has as yet been done. A number of observations have been made in transillumination of the pelvic tissues. As a result of these it is found that wherever there is morbid material, either in the form of exudative matter or abnormal growths, as fibroid tumors, sarcoma, etc., the tissues of the anterior pelvic and abdominal walls are not transilluminated but remain absolutely black. In the abnormal conditions which have been examined the pelvic cavity has been pretty well filled, so that there has been no transillumination. Of course with the morbid material on one side only, the other side should be transilluminated. In so far as the writer has done any work in this direction, she regards transillumination of rather doubtful utility. The conditions can be much more accurately determined by means of the educated finger than by any candle power of electric light that has yet been used.

I have been able to obtain translucency of the tissues within two inches of the umbilicus, but have demonstrated nothing save the course of blood-vessels.

The foregoing statements give a fair idea of the use of electric light in diagnosis, but they by no means compass all the methods by means of which electric light is helpful in therapeutics. One of the recent adaptations is known as the electric-light bath, and is based on the proposition that the properties of electric light are similar to those of sunlight. By means of a suitably constructed cabinet, patients are subjected to the rays of a number of incandescent lamps. The temperature can be regulated by passing the current through a resistance coil and may vary between 90° and 150° F., with a result equivalent to a combined light and vapor bath. The skin is browned as if by sun-burn and the effect is claimed to be most salutary.

The writer has had placed in her hands for use an apparatus furnished by a manufacturer of Newark, which is worthy of attention as a means of experimental work. It is a cabinet with an arc light arranged in front of a large tin reflector which can be raised or lowered at will. This and a lamp with a very strong lens and reflector for localization of the rays of light are the only apparatus which have been placed at my disposal. It is impossible, therefore, to say which form of apparatus is best. No observations have yet been made as to the efficacy of the light used through glass or similar substances, nor have investigations been attempted which would enable me to arrive at any conclusion as to possible difference in therapeutic effect between electric light and solar light.

Turning now to a consideration of the effect of light on living organisms we find that plants have been forced into rapid growth by exposure to the rays of the electric light. M. D'Arsonval has made many investigations on the effect of both sunlight and electric light on various bacterial growths. He found that cultures exposed to the white rays were not colored while those exposed to the red rays had developed pigment. He also expressed the opinion that light exerted a more powerful influence over bacteria than ozone or even oxygen.

Dr. H. Marshall Ward in a paper read before the Royal Society showed the effect of light on bacilli from the Thames, and found that in all cases both solar and electric spectra exerted no perceptible action whatever in the infra red, red, orange, or yellow region, while all the bacteria were injured or destroyed by the rays from the blue or violet spectrum. The intervention of a thin piece of glass resulted in cutting off a large proportion of the effective rays. The most distinctive rays, *i.e.*, those at the end of the blue and beginning of the violet, were to some extent effective even after reflection from the inner faces of a quartz plate covering the film, and the glass on which it was supported. This investigator goes on to say that these results evidently suggest that the naked arc light may prove to be a very efficient disinfecting agent for use in hospital wards, railway carriages, and other places where the rays could be projected directly on the organisms.

Theodor Geisler in 1892 found no qualitative difference between sunlight and electric light, only a quantitative difference. In the course of some experiments on the typhoid bacillus, he found the most decided effect was produced by the rays from the violet end of the spectrum.

P. A. Khmelevsky, of St. Petersburg, after prolonged experiments, concluded that both solar and electric light have an undoubted inhibitory influence on the growth of microbes.

Klebs-Loeffler has discovered that diffused light does not prevent the development of cultures of diphtheria at ordinary temperatures or at a temperature as high as 95° F., but that sunlight arrests this development, and after an exposure of several days sterilizes bouillon. This bactericidal power of light toward the bacillus of diphtheria is due almost exclusively to the rays of greatest refraction, those at the other end of the spectrum having little or no action of this kind.

Some years ago experiments were made with Jablochkoff candles in the Paris sewers, with the result that considerable purifying action was noted.

In 1881(?) Mr. Harold P. Brown, E.E., of New York, while using Brush arc lamps for lighting the basement of a store in Chicago, noted that within an hour after turning on the current, the odor from the closets, which at first was very offensive, became entirely neutralized.

The writer, who has an arc-light apparatus in her office such as has been described, made the following observation on a recent excessively hot day. The refuse barrels which had accumulated over Sunday in the basement and had not yet been removed Monday morning, emitted a very unpleasant odor, which filled the office. The arc light was turned on and the writer left the room for half on hour. On her return she found that every evidence of odor had disappeared and that the air seemed perfectly pure, while in another part of the house which was not near enough to be affected by the light, the odor still persisted as before. This action was undoubtedly due to the ozone.

In an article in *The Medical Week* for August 17, 1894, Dr. R. L. Boqles gives some interesting facts regarding the influence of solar rays on the skin and concludes that some other principle must be at work beside heat. Some observations of M. Charcot tend in the same direction. The phenomenon appears to be due to the action of the chemical rays in the ultra violet end of the spectrum. Mr. H. B. Hewetson, in the *British Medical Journal* for 1893, cites five cases in which eyes became inflamed after watching the operation of electric wiring by the arc light, unless the observer was protected by a shield of thick ruby glass. It was found that the skin of the face and neck would become tanned and would peel off just as if it had been exposed to the rays of the sun. This was evidently not due to heat but to the chemical rays.

M. Gautier has recently investigated a curious phenomenon, namely, that substances which have been submitted to the action of electricity or which have been exposed to the direct rays of the sun, are in a peculiar state of excitement which renders them much more active as regards one another than are the same substances prepared by the ordinary methods of the laboratory.

Such being the admitted facts, one is prepared for the assertion that electric light may be made a potent therapeutic agent. Dr. Gatchkowski, St. Petersburg, 1892, reports twenty-seven cases, chiefly of rheumatic and neuralgic pain, which he had quickly cured by the electric light, and Stanislaus von Stein also reports good results.

Few observations have yet been made by the writer as to the therapeutic value of electric light. Something, however, has been done, as the following particulars will show. In one case of cervico-occipital neuralgia of great severity, coupled with supra-orbital neuralgia, the application of the electric light was found to be exceedingly grateful to the patient and resulted in relief from pain for several hours. In a case of intense pain in the roots of the cervical cord, an extension of neuritis, the only way the patient was able to get sleep, without hypnotics, was by having an electric lamp placed directly over the cervical cord. In this instance, however, it is believed that the heat only produced this grateful result.

The following experimental observation is reported somewhat at length:

J. C——, twenty-one years of age; suffering from anæmia and enuresis. The electric arc-light bath was given for twenty minutes. The patient was placed upon a stool with the entire body exposed to the rays of light, special attention being paid to localizing it at the lumbar and sacral plexuses. The treatment was entirely experimental, but with the expectation of, at least, improving the nutrition. The writer felt willing to undertake it, as she was confident of being able, later on, to cure the enuresis by long percussive static sparks. The patient had suffered from nocturnal enuresis as far back as she could remember. Menstruation was established at seventeen and was perfectly regular. All the conditions were normal save that the patient was decidedly anæmic, and suffered from facial acne. The pupils were always dilated, and there was a tendency to constipation, the bowels often moving but once in two days—rarely two or three days consecutively. The wet nights were slightly variable; she would sometimes go in summer two or three nights without trouble, but rarely for this time in winter. In all, sixteen treatments were given, extending over a period of one and a half months, three times weekly. Careful examinations of the urine were made at first, and the pulse, temperature, and skin were carefully watched. Thirteen observations were taken of the temperature and pulse. In eleven instances the pulse dropped, and it was always of better volume after the bath. In two instances the pulse remained unchanged but its volume improved; while in every instance (thirteen times) there was a rise in the temperature of from one to eight degrees. The skin always became moist under the applications, and during the last treatments was very profuse. There was a general sense of well-being expressed by the patient after each application. Soon after coming under treatment the bowels became regular, and there was no trouble during the time she was under care, nor since then, a matter of nearly six months, excepting for a few days at one time after discontinuance of treatment, when very much hurried making preparations for leaving the city. The urine was analyzed from time to time, and showed a steady increase in the amount of urea eliminated The patient gained a pound and a half during the first two weeks, and since that time has gained seven pounds more, and is in better health than for several years. The temperature of the bath varied on different days, being affected by the outside temperature, but it ranged from 90° to 100° F., and the patient left the office feeling much better. No drug of any sort was given or allowed the patient during the time she was under observation.

Arrangements have just been made with a dermatologist to have observations made as to the value of arc light in parasitic skin disease, and, in fact, to carry out a systematic series of scientific experiments bearing upon these points. The writer is well aware that the value of one or two experimental cases is open to question, but under the special circumstances already referred to has thought well to mention the few cases quoted, wishing it to be distinctly understood that she considers the investigation very incomplete in its present stage.

It is interesting to note that Dr. Dawson Tyner, of London, commenting upon the well-known treatment of goître by smearing the part with red iodide of mercury ointment and then exposing the surface to direct sunlight, suggests that the effect is due to the power of iodine to cut off the visible rays of the spectrum. The fact that red iodide is the more efficacious points in this direction, for it would serve to transmit the heat rays only. In this way the part is subjected to the full blaze of the calorific rays without the vibrations of its molecules being altered by the visible rays. If this theory be correct we could expose diseased parts to sunlight or to a fire after the application of iodine. May not this suggestion give us a valuable hint in connection with the use of the electric-light bath.

And now, after studying this novel and interesting subject until we have begun to form some adequate conception of the potency of light, we are confronted with the rather startling announcement, from no less a physicist than Professor Dolbear, that there is no such thing as light—that there are no peculiar waves which can be called light. In proof of this assertion he describes a method of taking a photograph of an object in absolute darkness by means of the ether waves set up by working an electrical machine. We have already seen how similar are the effects of sunlight and the electric light, but lest there should still be a lingering doubt in the minds of some individuals regarding this point, that distinguished experimenter, Nikola Tesla, comes forward and produces a faint glow of light in a dark room with alternating currents of 800,000 voltage, by means of atmospheric vibrations to such an extent that the phenomenon would no longer be electricity, but light!

68 Madison Avenue, New York, October 30, 1894.

Who Fed Fevers?—The story of the physician who wished to have as his epitaph, "He fed fevers," has been told, the saying being usually attributed to Stokes. Dr. Julius Althaus writes to the *British Medical Journal* that it was Graves who said this. In the biographical notice of Graves which precedes his edition of the latter's "Studies in Physiology and Medicine," Stokes says: "Graves was going round the hospital, when, on entering the convalescent ward, he began to expatiate on the healthy appearance of some who had recovered from severe typhus. 'This is all the effect of our good feeding,' he exclaimed; 'and lest, when I am gone, you may be at a loss for an epitaph for me, let me give you one in three words:

"'He fed Fevers.'"

Trousseau has alluded to this point in his introduction to the French translation of "Graves's Clinical Lectures," where he says: "Graves's maxims relating to the regimen of fever have become the guide of practitioners of all countries; yet when he inculcated the necessity of giving nourishment in long-continued pyrexias, the Dublin physician assailed single handed an opinion which appeared to be justified by the practice of all ages. Had he rendered no other service than completely reversing medical practice upon this point, Graves would, by that act alone, have acquired an indefeasible claim to our gratitude."

MAY THE SHOCK OF A RAILROAD ACCIDENT EVER BE BENEFICIAL TO THE RECIPIENT?[1]

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My excuse, if one be needed, for selecting the above subject for a paper before this learned body is that a brief consideration of the possible benefits of a railroad accident may prove of interest and profit, if for no other reason, simply because we have been made so familiar with the injuries, both immediate and remote, which a railroad accident may inflict upon its unfortunate victims, that it may be worth our while to consider the other side of the question, and to dwell for a few moments upon the benefits, if any there be, which may follow such an accident.

The great variety and extent of railroad injuries afford to this branch of surgery an interest peculiarly its own. The railroad surgeon is called upon to treat lesions more variable and complex than those that usually come under the care of the military surgeon. In war it is true that men are horribly wounded by missiles and explosives of different kinds, are cut by sabres, trampled by horses, stabbed by bayonets, etc. They are, however, seldom or never scalded by escaping steam, burned or drowned in wrecked cars, or crushed under heavy bodies. Moreover, soldiers are picked men in the prime of life, and are, by their training and surroundings, inured to danger. They look upon wounds, sickness, and even death, as some of the contingencies of their profession. In battle, especially, they are nerved up to a high pitch, and often suffer willingly for the cause in which they are enlisted. It is not so with the victims of a railroad accident. These unfortunates are of all ages and stations, of both sexes, and of every degree of bodily strength and mental calibre. Furthermore they are injured when totally unprepared for an accident. They are taken entirely by surprise, and the shock and fright complicate and increase their injuries, and bear a considerable relation to the ultimate result. The nervous and psychic lesions following railroad injuries have for years engaged the attention of the alienist and neurologist, as well as the surgeon, and various and far-reaching have been the results of their studies. In these respects I think that you will agree with me that railroad surgery covers a wider field than military surgery.

Who, indeed, ever heard of a military spine? Perhaps this is one of the discoveries now in the womb of the future which only awaits some bold accoucheur for its delivery and addition to that already numerous family of disabilities for which enterprising patriots may draw pensions from a grateful country.

A surgeon of this city has described typhoid spine, and it seems probable that, following in the steps of Erichsson, other writers will, from time to time, increase the present stock of spines indefinitely.

So far as the scope of this brief paper is concerned, it will simplify matters to consider our subject under two heads, as follows: 1. May a person suffering from some bodily ailment be benefited by the shock of a railroad accident? and 2, May a person suffering from some nervous or mental disorder receive benefit in a similar manner?

The literature relating to railroad injuries does not provide as many cases illustrating these questions as could be wished. Yet some quite striking ones may be found, and doubtless the number would be largely increased if railroad surgeons generally would report cases of which they may be cognizant. Probably nearly every one in this room can recall cases in which disease has been checked or even cured by the shock and excitement of a railroad or other serious accident.

Hack Tuke, in the preface of his book, "Influence of the Mind upon the Body," relates the following case which he had found in a newspaper under the heading "Curative Effects of a Railroad Collision." I quote *verbatim*: "Allow me to confirm all that your two correspondents have related with respect to the alarming collision on the 17th inst. on the Midland line. Nothing needs to be added either to their description of the circumstance or to their just condemnation of the reckless negligence which brought us so near to death; but the shock produced so curious an effect on myself—an effect perhaps unparalleled in the history of railway accidents—that you will perhaps excuse my troubling you with the details.

"At my hotel in Manchester I was seized with all the symptoms of a violent attack of rheumatic fever, in fact, my condition so alarmed me and my dread of a sojourn in a Manchester hotel bed for two or three months was so great that I resolved to make a bold *sortie* and, well wrapped up, start for London by the 3.30 P.M. Midland fast train from the London Road terminus. From the time of leaving that station to the time of the collision my heart was going at an express speed; my weak body was in a profuse perspiration; flashes of pain announced that the muscular fibres were under the tyrannical control of rheumatism, and I was almost beside myself with toothache. Crash! smash! bump! and bang! and from side to side of the carriage I went like a billiard-ball under a hard cushion hit. The compartment was soon seen to be sprinkled with the blood of a hapless victim whose face had come into crushing contact with it." Dr. Tuke continues—"The rest of this paper was unfortunately wanting, but I learnt from other sources that, as the heading intimated the patient was cured of his rheumatism."

I can relate a somewhat similar case of serious accident on shipboard which undoubtedly prolonged for years the life of the young man who received the injury.

L. M——, aged about twenty, came of a highly phthisical family. His father and mother, and all of their children, were consumptive. The latter all died, soon after reaching maturity, of this disease. When L. M—— was approaching his majority, similar symptoms began to manifest themselves in him to those that had appeared in the older members of his family. He was sent to California in a sailing vessel in the hope that the voyage might be of benefit to him. When the ship was returning to New York, the young gentleman, having climbed into the rigging, lost his hold and fell from a great height on to the deck, striking the keel of an upturned boat. He sustained fractures of both legs and other serious injuries. In one leg at least he had a compound comminuted fracture. He was laid up for months, and it was supposed that this accident to one in his delicate condition would surely prove fatal. For a long period one or more open sinuses in his leg discharged freely pus and bony detritus. Contrary to the general expectation, however, the young man finally recovered from his injuries, although he walked with a limp from shortening of one leg. As he began to get about it was observed that his pulmonary symptoms had disappeared. He grew stouter and stronger. He was able to engage in business and married and had a family. Whether his death, which occurred a number of years afterward, was due to tuberculosis or not, I have not been able to ascertain. It seems fair to assume, however, that his life was prolonged by the accident.

A case of gout suddenly cured by fright is given in Tuke's work already cited. I quote *verbatim*: "Peter Fether, the person cured, is now alive, a householder in Reading, seventy-three years of age, a native of Germany, and a very hearty man. The first fit of gout he ever had was about the year 1773, and from that time until 1785 he had a regular attack in the spring of every year. His feet, hands, and elbows were much swollen and inflamed. The fits lasted long and were excruciating. In particular the last fit in 1785 was so severe as to induce an apprehension that it would inevitably carry him off, when

[1] Read before the Erie Railway Surgeons' Association, at the Academy of Medicine, New York City, January 5, 1894.

he was suddenly relieved by the following accident: As he lay in a small back room adjoining the yard, it happened that one of his sons in turning a wagon and horses drove the tongue of the wagon with such force against the window, near which the old man lay stretched on a bed, as to beat in the sash of the window and to scatter the pieces of glass all about him. To such a degree was he alarmed by the noise and violence that he instantly leaped out of bed, forgot that he had ever used crutches and eagerly inquired what was the matter. His wife, hearing the uproar, ran into the room, where to her astonishment she found her husband on his feet bawling against the author of the mischief with the most passionate vehemence. From that moment he has been entirely exempt from the gout, has never had the slightest touch of it, and now enjoys perfect health, has a good appetite and says he was never heartier in his life." The reporter of this case, who was no less a person than Judge Rush, brother of the famous surgeon, goes on to say, "To you, who have long been accustomed to explore diseases, I leave the task of developing the principles on which this mysterious restoration from the lowest decrepitude and bodily wretchedness to a state of perfect health has been accomplished. I well know that toothaches, headaches, hiccoughs, etc., are often removed by the sudden impression of fear and that they return again. But to see a debilitated, gouty frame instantly restored to vigor, to see the whole system in a moment, as it were, undergo a perfect and entire change, and the most inveterate and incurable disease radically expelled, is surely a different thing, and must be acknowledged a very singular and marvellous event. If an old man, languishing under disease and infirmity had died of mere fright nobody would have been surprised at it, but that he should be absolutely cured and his constitution renovated by it, is a most extraordinary fact, which while I am compelled to believe by unexceptionable evidence I am totally at a loss to account for."

A case of the relief of ascites due to an accident is recorded by Dr. John Pennington, who says: "A sailor in an ascites fell off the end of the yard into the sea; the weather being calm he was taken up unhurt, but to use the sailor's words who told me the story, he was frightened half to death and as soon as he was taken out of the water he discharged a gallon of urine or more." Dr. Pennington observes, "the sedative operation of fear was no doubt the cause of the cure."

I cannot forbear to give one other case which was related to me in my boyhood. An Irish peasant had suffered for a considerable time with fever and ague and the ordinary remedies having failed to arrest the disease, an extraordinary one was employed, some human ordure was concealed in a bowl of milk, which the patient was made to drink to the bottom. The intense disgust and horror which the dregs of this dose caused, it was alleged, entirely 'broke the chills.'"

I have given these cases at some length because they appear to me remarkable, and because their recital answers the first of the two questions that were asked in the beginning of this paper, viz.: "May a person suffering from some bodily ailment, be benefited by the shock of a railroad accident?" There is no doubt that a favorable result may follow in certain cases. Naturally we should hear of such results far oftener, were it not for the fact that the proportion of people injured in railroad accidents to the whole number of travellers is exceedingly small; and of the injured a very small percentage are suffering from illness at the time of the accident.

As to the second division of our subject, I find that the time allotted me is already about exhausted, and that the field for discussion upon the effects of shock upon the nervous system in health and disease is almost without limit. I could multiply cases almost without end, to show that the emotions—fear, anger, and excitement—can, and frequently have benefited or even cured the most severe nervous maladies. From the nature of such complaints such a result seems reasonable enough. It is well known that such grave nervous lesions as chorea, paralysis agitans, asthma, epilepsy etc., are frequently brought on by fright or other strong emotion and are also cured by similar means.

I will not take up your time by citing cases of which a number are given in Tuke's work already referred to. Professor Goodell, of Philadelphia, in a recent lecture, has related some remarkable cases of coccyodynia and other nervous affections of which the cause was mental or emotional, and which were apparently cured by anger, fright, or excitement.

I cannot forbear to quote one case, which is given in Professor Norton's "Life and Letters of James Russell Lowell," recently published. It seems that while Mr. Lowell was minister to Spain, his wife's health was apparently in quite a precarious condition. He received a letter from the State Department at Washington, offering him the mission to England, which he was desirous of accepting, but felt obliged to decline, as it did not seem possible that his wife could be moved. In fact she was confined to her bed and seemed perfectly helpless. After Mr. Lowell had despatched his letter declining the English mission, his wife's bedclothes took fire; whereupon she jumped up with the greatest alacrity and for the time being at least found herself quite well. Mr. Lowell then sent a telegraphic message to Washington, in time to anticipate his letter of declination, and accepted the mission.

That intractable and discouraging disease epilepsy has occasionally been cured by a fall or blow, or by fright. It would seem that the nervous elements that have been disarranged by one shock might be shaken back into place by another. I would explain the beneficial results that have followed most of the surgical operations for epilepsy by saying that they are caused by the fright or excitement of the operation.

I believe that enough has been said to prove that a railroad accident, horrible as it is apt to be, may be of benefit to those concerned in it. As a therapeutic measure fright or shock, produced by such a means is of course entirely out of the question.

How far a physician may be justified in shocking or frightening a recalcitrant or hysterical patient is a problem requiring the nicest discrimination and the highest diagnostic acumen. Such a course has sometimes succeeded in doing good. It has often done harm. Of practical results our discussion may have been barren, but I venture to hope that it has not been entirely uninteresting.

A Strange Disease in Dublin.—A number of the inmates of the Richmond Insane Asylum at Dublin have been attacked with a disease resembling beriberi in many of its features. The symptoms are a general œdema, beginning in the legs and spreading thence to the whole body, followed by peripheral neuritis and paralysis. There is no fever, and albumin has been found in the urine in a few cases only. The heart is weak and dyspnœa is complained of. After a while the œdema diminishes and signs of neuritis appear; then atoxic symptoms set in with loss of the patellar reflex and muscular atrophy of the extremities. Post-mortem examination has shown hydropericardium, œdema of the lungs, ascites, and fatty degeneration of the heart and kidneys. Over a hundred inmates of the asylum have been attacked with the malady.

Porous Glass for Windows.—The latest hygienic craze in Paris is the use of porous glass for windows. This is declared to possess all the advantages of the ordinary window-framing, and, while light is as freely admitted as through the medium of common glass, the "porous" further admits air too, the minute holes with which this is intersected being too fine to permit of any draught, while they provide a healthy continuous ventilation through the apartment.—*The Hospital.*

TUBERCULOSIS—ITS ETIOLOGY AND PROPHYLAXIS.[1]

By F. A. BOTTOME, M.D.,

NEW YORK.

BEFORE the discovery of the tubercle bacillus by Koch in 1881 there existed a great difference of opinion as to the etiology of pulmonary tuberculosis; since then all the study expended upon the subject has but strengthened the position of Koch, and in this present year our Health Board expresses the universal belief when it states: "Tuberculosis is a communicable disease and is distinctly preventable, and acquired by the direct transmission of the tubercle bacillus from the sick to the well."

Indeed, we are all so familiar with this view of the etiology of tuberculosis that it would be presumptuous on my part to go over this well-beaten ground. Our Health Board has distributed among the physicians of this city a circular from which I have just quoted, and which expresses the latest views on the subject in a clear, concise way, and moreover gives the most practical methods for destroying the tubercle bacillus and thus preventing the spread of the disease.

As you are all doubtless familiar with this circular I shall not take up your time to read it, but call your attention simply to one paragraph, which reads as follows:

"It is a well-known fact that some persons, and especially the members of some families, are particularly liable to tuberculosis. So marked and frequent is the development of the disease in certain families that the affection has long been considered hereditary. We now know that the disease itself is very rarely hereditary, but that there is inherited a liability to the disease which renders the individual a more easy prey to the living germs when once they have gained an entrance."

This "liability to the disease" is a phase of the subject which, it seems to me, is often lost sight of in the consideration of tuberculosis. We think of the disease as being caused by a specific micro-organism, the tubercle bacillus; but we forget that this germ is powerless unless there is a coincident peculiar state of the system—"a liability to the disease."

Without depreciating in the least all that the Health Board is doing to eradicate this disease by the destruction of the tubercle bacillus, I would emphasize the fact that there is another way of accomplishing this end, which should go *pari passu* with the former, and which is the peculiar province of the practising physician, *i.e.*, removing the peculiar state of the system which constitutes a liability to the disease. Indeed until the great work which the Health Board has undertaken in this line has succeeded in lessening to a very great extent the countless numbers and universal distribution of this dread germ, it would seem as if the removal of the liability to the disease was easier than the eradication of the germ. And yet there should be no relaxation on our part in carrying out the former while we endeavor to accomplish the latter, since carelessness in so doing may result in the occurrence of the disease in the individual before we have succeeded in removing the "liability."

It will not be amiss, then, if we spend some little time in considering what constitutes this liability and the means for its removal.

This peculiar state of the system is variously designated tubercular habit, tubercular predisposition, tubercular diathesis. That it is this diathesis which is inherited and not the disease itself has been quoted above; but not only may it be inherited, it may also be acquired, and this will account for the cases of tuberculosis occurring in those whose family histories show no trace of the disease for generations back; in other words, this diathesis may be inherent in the constitution of an individual.

Children of tuberculous parents are frequently, during the early period of their lives, to all appearance perfectly healthy and may remain so till the first symptoms of the disease appear in the cough, hectic flush, and malaise; while in others we recognize at an early period certain physical conditions which warrant us in predicting the advent of tuberculosis at a later period. Thus they may exhibit the slight build, contracted chest, and delicate complexion. But if it is true that in both these classes of cases the diathesis exists, we must look for this diathesis in some defect deeper than in a gross physical malformation visible to the eye.

S. Solis Cohn, in speaking of this condition, says: "It is a negative, not a positive, state; an absence, not a presence. . . . That which is wanting in individuals who become tuberculous is the life force, the vital energy, an energy which we know to exist because of its manifestations as fully as we know electric energy to exist."

Vital energy we know is an inherent quality of the individual cell, so that, if Cohn's view is correct, this deficiency in vital energy must be inherent in the individual cell, and whether this be absolutely true or not it at least serves as a working hypothesis and is consistent with many of the peculiar phenomena of this condition. For instance, we know the cell contains not only sufficient energy to meet the ordinary demands made upon it, but is continually storing up surplus energy (potential energy) to be used in time of extraordinary demand, and this would explain those cases of tuberculosis developing in persons apparently healthy, the fact being that in these the individual cells possess sufficient energy for ordinary circumstances but succumb under an unusual, though, perhaps, slight demand, and, sinking below a certain point, are in the proper condition to constitute a suitable nidus for the development of the tubercle bacillus.

At the present time this germ is so widely distributed and exists in such numbers that it would seem as if there must be a constant warfare between the germ and the cell, the former laying siege to the latter, and waiting patiently till the cell shall be sufficiently reduced in strength to warrant an easy victory.

This comparison is not a bad one, for it indicates the proper line of treatment. The vital point with a besieged army is to keep up the supply of food, and the same is true of the cell in its warfare against the tubercle bacillus. If the cell is sufficiently fed, so that its vital energy remains above par, it can defy the tubercle bacillus and hold it at bay till the bacillus itself dies, for the tubercle bacillus cannot multiply unless it feed upon the animal cell, and also its period of vitality and virulence outside the animal body has a limit.

In the use of this term, vital energy, it must be remembered that it includes that energy which is expended in nutrition, heat-production, growth, development, repair, etc., and also the stored-up or potential energy which is held in reserve for some unusual demand which may be made upon the system.

There is one objection, it seems to me, in this theory of the deficiency of vital energy in the individual cell as the distinguishing characteristic of this diathesis, and that is the fact that if lowered vitality were all that is necessary to make the cell a suitable nidus for the growth of the tubercle bacillus, then we should expect to find tuberculosis developing in all individuals whose vitality had been greatly reduced by some outside cause, as by some one of the wasting diseases. This, however, is not the case.

It would seem as if there were some deeper defect in these cells, to which, if there is added a deficiency of potential energy, the cells are vulnerable to the tubercle bacillus; while in a cell not subject to this diathesis such a lack of potential energy would not make it more vulnerable. In other words our theory is that it is this, at present, undefined defect of the cells, to which if there is added a lack of potential energy, they become vulnerable to the tubercle bacillus. This view does not conflict with the recognized methods or results of treatment, for it recognizes the fact that the safeguard of the cell, subject to this diathesis, is the maintenance of potential energy, while in cells not subject to this diathesis such a

[1] Read before the Harlem Medical Society, November 7, 1894.

safeguard is not necessary, since they are not vulnerable to the tubercle bacillus under any conditions.

Treatment.—In the treatment of this condition or diathesis it must be remembered that we are dealing not with patients who have already developed tuberculosis, but with those who simply have the diathesis, usually inherited; since with our present knowledge we are hardly able to diagnose the inherent cases before tuberculosis itself has developed, and then only by inference in the absence of family history.

To put it in a more practical way, what can we do for those cases which give a strong family history of tuberculosis, and whose friends, if not themselves, ask our advice as to the means of preventing the development in them of this dread disease? Such a question is a very common one, which the practitioner is asked to answer.

If it is true that the safeguard in these individuals against the disease is the maintenance of potential energy, then the problem of treatment resolves itself into the consideration of the best methods of supplying this potential energy to the cells. The more we study the subject, the more shall we be impressed with the fact that the treatment of this condition embraces the whole subject of hygiene, and doubtless it is owing to the vastness of the subject that the above question is so often answered by the busy practitioner in the few words, "Keep the patient strong and well."

So far as it goes the answer is correct, but its accomplishment will not be attained unless we go into explicit detail, and treat each case individually, for we shall find a great difference in individual cases, and in the same case at different times, and each of these indicate special treatment.

Of course it will be impossible for me to do more than indicate the line of treatment, with perhaps special emphasis placed on certain points, but we shall be greatly aided if we keep well in mind the object of our treatment, the increasing of potential energy. In supplying this energy three means naturally suggest themselves, in food, air, exercise, and by regulating these we can accomplish a great deal even among those who must of necessity remain in the city, where these cannot be so easily regulated as in the country, and in special climates.

Food.—In the classification of food we find that different classes serve different purposes in the animal economy. Thus the nitrogenous elements serve principally the purpose of tissue-building, and the storing up of potential energy, while the hydrocarbons and carbohydrates are concerned principally in heat production, and from this fact it is evident that the food-supply in these subjects should contain a large proportion of nitrogen. Unfortunately it is in this very class of patients that we find a marked perversion of appetite, a liking for sweets, a distaste for meat, and it will require all our powers of tact and persuasion to regulate properly the diet of these cases. Some experimenters claim excellent results from an exclusive meat diet, but aside from the difficulty of carrying this out, among private patients at least, the general consensus of opinion is in favor of a mixed diet composed largely of nitrogenous foods.

If we are fortunate enough to have the patient under observation from the time of birth, the problem is less difficult, providing we can enlist the co-operation of the parents. The fact that the child of a tuberculous mother should not be fed from the mother's breast, on account of both mother and child, is universally conceded, but in addition to this, would it not be wiser that a mother who inherits merely this diathesis, although she may not have developed tuberculosis, should not suckle her offspring?

At the present time when the subject of bottle-feeding has been placed on a scientific basis, so that cow's milk can be made almost identical with human milk, the removal of the child from the breast is no longer such a serious question, nor is there the unpleasant alternative of a wet-nurse.

It is possible in this city to order a milk containing the albuminoids, sugars, and fats in whatever proportion the physician may desire, and by taking advantage of this fact we can increase the albuminoids or nitrogenous portion in these cases and watch the effect.

I do not know whether this has been done by anyone as yet; but is there not here a field for investigation to find out the effects of a larger proportion than is usually given, of the nitrogenous elements in the diet of an infant of tuberculous parents?

As the diet of the child increases in variety it should still consist of only plain wholesome food, largely of a nitrogenous character. The child should not be permitted to develop an appetite for sweets and pastry. The custom of giving a child candy as a reward or bribe is a bad one, aside from the questionable moral effect, and especially is it true in the cases under consideration, for perfect digestion is a *sine qua non* in their successful treatment, and in these subjects (the) sugars are very apt to cause digestive disturbances.

As the child grows older the diet, of course, varies somewhat; but the same principle holds good. And in the selection of articles of diet, with the aim of giving a large proportion of nitrogen, we shall find a large number from which to choose, for aside from meat we find other articles containing a large proportion of nitrogen; thus eggs contain about thirteen per cent. of proteids, fish, eighteen per cent., oatmeal twelve per cent., peas twenty two per cent., cheese thirty-one per cent. I mention these simply to emphasize the fact that meat is not the only nitrogenous food, and that in regulating the diet, to prevent sameness, we can select food-stuffs which will still aid in accomplishing our aim.

Air.—The necessity for fresh air is as important as the necessity for proper food. The rôle which oxygen plays in the metabolism of the body is a well-known physiological fact, but is more often disregarded in practice than remembered in theory.

It would, of course, be better for persons subject to this diathesis to live in some region where the air is absolutely pure, and where the tubercle bacillus is not present, but this is not often practicable nor is it necessary. If we breathed nothing less pure than the out-door air of this city we should have little cause for complaint. It is the air in our dwellings that is impure, and the fault is our own.

When the patient is old enough to look out for himself we can advise him, as far as possible, to lead an out-of-door life, and in the case of a young man to select a business or profession where this will be possible; but if the patient is an infant or young child we must be explicit in our directions to those in charge of the child, and teach them a few lessons on the subject of ventilation.

We must show them how perfectly possible it is to ventilate a room without the presence of draughts. That it is only necessary to have a communication between the outer and inside air, and by the law of diffusion of gases, and the law which relates to the difference in weight of masses of air of unequal temperature, the warm, impure air of the room will pass out, and the cool, pure, outer air will come in and take its place, and that the process can be made to take place so gradually that the temperature of the room remains stationary.

We can tell them that the simplest, and yet one of the most delicate means of testing the purity of the air in a room, is that by the sense of smell; that on entering a room to be tested we should notice no difference in point of freshness between the out and inside air, remembering that warm air is not necessarily impure, and that in this test the question of temperature is not to be taken into account.

These are homely truths and it would hardly seem necessary to mention them, and yet is it not true that the majority of sleeping-rooms have a disagreeable, stuffy odor before they are aired in the morning? This odor is due to the organic matter exhaled from the lungs and skin, and if not removed from the air of the room is taken into the lungs with each respiration and constitutes

a positive poison. Such a condition is bad enough for healthy subjects, but for the cases under discussion, in whom the amount of vitality is below par, is a serious drawback to our efforts in overcoming this diathesis.

Exercise.—As the child grows older, and especially during the period of youth, exercise is important as a prophylactic measure. In considering the subject of food we pointed out the necessity of increasing the nitrogenous elements; but this is only possible as it is combined with active physical exercise. The nitrogen assimilated is stored up, principally in the muscular tissue, and as this is increased and developed a correspondingly large amount of nitrogen is stored up.

In considering the different forms of exercise it will be well to select, as far as possible, those which, of necessity, must be performed in the open air, as fresh air is thus obtained at the same time. Bicycle riding is an excellent form of exercise, providing a faulty position is not adopted; also brisk walking, especially when taken with some definite purpose other than for its own sake. Swimming, horseback-riding, and, in short, all recognized forms of healthy out-door exercise will accomplish the desired end.

Besides these there are special forms of exercise which apply particularly to these subjects in whom there are frequently found a poor chest development and deficient lung expansion. Perhaps one of the best means for overcoming these defects is the exercise of swimming, in which there is, of necessity, a forced inspiration and a special development of some, if not all, of the muscles of respiration.

In addition to these there is the exercise with the so-called chest-weights, and how much can be accomplished by these and other forms of gymnasium apparatus has been recently shown in a paper read before this Society by Dr. Gardner Smith. The only objection to exercise in the gymnasium is the poor ventilation frequently found there, but this is a fault easily remedied. A simple yet practicable means of increasing the lung expansion, including the apices, which, in these cases, are so apt to be partially collapsed, is that in which the subject, when walking in the open air, inhales slowly and deeply, and then retains the air in his lungs for a few steps, when he gradually exhales. In this way I have seen the lung capacity markedly increased. To some of these patients, on account of business, daily open air exercise or that in the gymnasium is an impossibility. In these cases I advise the purchasing of a chest weight apparatus, which is placed in the bath-room and used every morning for a short time, followed by a cool plunge-bath and brisk rubbing. The latter serves the purposes of cleanliness, an active tonic, and a means of hardening the skin, thereby lessening the liability to "catch cold." The interest of the patient in his increasing muscular development removes the sense of irksomeness from the exercise, and the after effects of the cool bath are such that it soon becomes a great pleasure, and not to be foregone by one who has become accustomed to its use.

These are a few of the salient points in the hygienic treatment of this condition. I have made no mention of drugs because, in the majority of cases, they are not called for, though often their treatment is dismissed with a prescription for cod-liver oil. Any intercurrent disease must be treated on its own merits, and this includes the surgical measures indicated in diseases of the respiratory tract, to which we should pay special attention.

In closing, let me again emphasize the fact that the etiology of tuberculosis is twofold, and that in the prophylactic treatment we should pay as much attention to the diathesis as to the tubercle bacillus.

My excuse, if one is needed, for confining myself in this paper to the consideration of the diathesis, is that I feel that this side of the question is too often neglected in practice, and that while the exact nature of this diathesis is theoretical, the treatment based on this theory is highly satisfactory.

41 West 126th Street.

Progress of Medical Science.

The Surgery of the Gall-bladder and Bile-ducts, with Brief Notes of Seventy Eight Cases.—Dr. Robson speaks of the most prominent symptoms and complications of cases of cholelithiasis which have come under his observation: 1. Spasms or biliary colic without jaundice, the attacks being repeated at longer or shorter intervals. 2. Collapse due to the intensity of the pain. 3. Spasms followed by evanescent jaundice. 4. Pain followed by persistent jaundice and enlargement of the liver. 5. Hydrops of the gall-bladder without jaundice. 6. Ileus due to atony of the bowel. 7. Acute intestinal obstruction due to paralysis of the gut from local peritonitis, volvulus of the small intestine, or impaction of a large gall-stone in some part of the intestine.

In the majority of these cases, where medical treatment has failed, surgical procedures hold out very good hope of success in nearly every complication, if the patient be not too much exhausted. Cases complicated with malignant diseases are very unfavorable for operation. First, because the subjects of cancer are, as a rule, cachectic and worn down by disease before the surgeon is called in; and, secondly, because such patients are prone to hemorrhage at the time of the operation or subsequently. The author claims that there is considerable risk in operating on patients that are markedly jaundiced, on account of hemorrhage, but more especially as the jaundice is frequently associated with malignant disease. In order to avert the danger of hemorrhage in jaundiced patients the author has found that the administration of chloride of calcium for a few days before the operation makes the blood more plastic and lessens the tendency to bleeding both at the time of operation and subsequently. In jaundiced cases he prefers ligating all bleeding points rather than trust pressure forceps. In all of the cases operated upon by the author, in which there was malignant disease with jaundice, the gall-bladder formed a perceptible tumor, whereas, when the jaundice was dependent upon gall-stones, no marked tumor was present. A valuable diagnostic point, the author claims, is tenderness on pressure over some point between the eighth or ninth costal cartilage and the umbilicus. The so-called diagnostic operation of sounding for gall-stones and aspiration of a distended gall-bladder the author believes to be futile and dangerous, and is much better replaced by a small exploratory incision, when treatment can at the same time be carried out, if required. The indications for operating in these cases the author gives as follows: 1. Frequently recurring biliary colic, without jaundice, with or without enlargement of the gall-bladder. 2. Persistent jaundice ushered in by pain. 3. Empyema of the gall-bladder. 4. Peritonitis starting in the region of the liver. 5. Purulent collections about the gall bladder.

If the bladder and ducts can be cleared without much difficulty, the opening in the gall-bladder can be sutured to the aponeurosis and drained. If the ducts cannot be cleared, one of the following procedures may be carried out: 1. Cholelithotrity, the stone being crushed between the finger and thumb or by padded forceps. 2. Choledodectomy, opening the duct, removing the stone, and suturing the duct afterward. A drainage-tube should always be inserted in the right kidney pouch in these cases. 3. Cholecystenterostomy. This operation may be easily performed if the gall-bladder be dilated. The author prefers the decalcified bone bobbin, as only two sutures must be applied. 4. The daily injection of fluids after an interval of some days, through the cholecystotomy opening, which will either soften or dissolve the concretion. For this, hot water, or a solution of taurochlorate of soda, may be used, or, as the author prefers, injections of olive oil or a five per cent. solution of oleic acid. 5. Cholecystectomy may be required as

a secondary operation in cases of stricture of the cystic duct, the common duct being free. With but very few exceptions a vertical incision along the upper part of the right similunar line gives ample room.—*The British Medical Journal.*

The Treatment of Obstructive Jaundice.—Dr. Dujardin-Beaumetz divides this condition into three classes with reference to its causation: 1. Obliteration from a calculus. 2. Obliteration from inflammation. 3. Obliteration from compression by tumors—the last belonging exclusively to the domain of surgery.

Hepatic calculi are more frequent in women, and it is probable that the corset is an important factor in their causation, which is further aided by the usual costo-superior type of respiration. In these cases systematic massage can do much in relieving the causative factor. Of the cholagogues, the watery alcoholic extracts, as podophyllin, cascarillin, and euonymin, and even sodium salicylate, can be of service. To these should be added alkalies, as the waters of Vichy or Vals. For the treatment of hepatic colic two agents have recently been introduced—oil and glycerine. The oil has been the subject of numerous papers, and has achieved considerable success, but it possesses the marked inconvenience of being repugnant to the patients, and they swallow with considerable difficulty, at one time, the large amount (seven ounces) which is required. Glycerine in much smaller quantity, two and one-half to five drachms, appears to be equally effective, either given clear or mixed with water. If the latter fails, then it is necessary to resort to anodyne suppositories, ether sprays over the hepatic region, hypodermatic injection of morphine and atropine, or even of chloroform if the pain is acute. The obliteration from inflammatory action, which is usually the consequence of a duodenitis, requires different treatment. The duodenitis may be the result of an excessive alimentation in quality and quantity, or an incomplete mastication. It is necessary to regulate and increase the number of meals—for each meal, by giving rise to reflex phenomena, produces an increased flow of bile. Irritant foods must be avoided—those which increase the gastric acidity, especially alcohol and liquids containing it. In the advanced stages it is necessary to resort to intestinal antiseptics, of which the most in use are salol, benzonaphthol, and the salicylates. Salol, usually the best of all, is here unavailing, because the bile being arrested, the contents of the duodenum are acid, and no decomposition of the drug occurs. To obtain antiseptic effects from benzonaphthol one drachm or more each day is required. Of the salicylates, bismuth salicylate is the best. Since this colors the fæces it is difficult to arrive at a true understanding of the patient's condition; to avoid this inconvenience asaprol has been substituted with advantage. Calomel is useful because it is at the same time a purgative and an antiseptic; but it should be used with caution if the treatment is to be prolonged. Constipation is always an important symptom, and the use of Rubinat, Carabana, Villacabras, and even Carlsbad is advisable. Pancreatin may be useful in some cases.—*American Journal of the Medical Sciences.*

Stomach-reefing.—This operation has been performed by Dr. Brandt for dilatation of the stomach. It is well known that the stomach becomes enlarged in cases of pyloric stenosis due to new growth, cicatricial contraction, or bands of adhesions. The rational treatment of this stomach trouble is the removal of the cause. This is accomplished by pylorus resection and excision of pyloric cicatrices, which have been so successfully done during the past few years. It sometimes happens, however, that after opening the abdomen no such a cause is found for the dilatation. If the wound is closed, the laparotomy has been nothing more than an explorative operation, and the patient continues to suffer from the disease, the case being then regarded as a medical one and a subject for medical treatment. It has occurred to Brandt to treat these idiopathic cases by diminishing the size of the stomach by folding in its wall and suturing it through the serosa and muscularis. The patient upon whom he operated was a woman, twenty-six years of age. The gastric sound could be introduced till it struck the pubes and left Poupart's ligament. Palpation revealed no tumor of the pyloric or other region, nor even an abnormal resistance. The patient was poorly nourished and greatly reduced in strength. She was treated medicinally by faradization and lavage of the stomach, with little improvement. After this treatment had been carried on for two months, Brandt made an opening into the abdomen parallel with the left costal arch, and explored the stomach and other abdominal contents. The pylorus was especially examined, and nothing found. The organ was found enormously enlarged. He then proceeded to fold in the anterior wall and suture it by two rows of transverse sutures. The same was done on the posterior wall through holes torn through the great omentum. More than two hundred sutures were applied. The patient made an excellent recovery, without any disturbance of digestion, and was able to leave her bed on the tenth day. Brandt has published this case as preliminary to a more exhaustive communication upon the subject. The same operation has been described under the head of "gastrorapie" in the same periodical.—*Annals of Surgery.*

A New Method of Resecting the Rectum.—Dr. Routier described (Chirurgical Society, Paris) a method of resecting the rectum as devised by Moulonguet, a modification of Kraske's operation. The first step is the same as in Kraske's operation; the sphincter is then dissected out, and even though the lower portion of the rectum is found healthy, it is cut away instead of being preserved, as in Kraske's operation. The sphincter, after having been dissected out, is lined by the upper portion of the rectum, which is pulled down for this purpose and sutured to the edges of the wound at the anus. The perineo-sacral wound is then sewn up, with a drain in the lower portion. In Dr. Routier's estimation the usefulness of the operation is rather limited, especially to cases in which the cancer is not situated high up, and in cases in which the sphincter is intact.

The Inoculability of Cancer.—Dr. Gratia reported, at the Academy of Medicine, Brussels, a series of experiments, in which he had employed grafting and inoculation, with the object of proving or disproving the inoculability of cancer. The result of his experiments led him to conclude that cancer does not seem to be inoculable even between individuals of the same species. He likewise feels justified in making the following statements: 1. The parasitic nature of cancer has not been satisfactorily proved. 2. The direct or indirect contagiousness of this neoplasm has not been proved; the most that can be admitted, in the present state of our knowledge on this subject, being the possibility of ingrafting, that is to say, transplanting cancer, and that only in individuals exhibiting exceptional predisposition such as cancerous patients themselves. 3. The etiology and pathogenesis of cancer are still undetermined.

Myxœdema and Thyroid Therapy.—Ewald presented to the Medical Society of Berlin a woman, aged fifty-two, who had been treated for myxœdema by the use of the thyroid gland in tabloid form. The three points to which he called attention in the report of the case were: 1. The complete failure of all other forms of treatment. It was also peculiar that the hypodermatic use of the thyroid extract had been fruitless. 2. Investigation of the products of retrograde and constructive metamorphosis showed, in contradiction to what has been reported by English and Danish observers, that the urinary constituents were not increased. 3. The presence of a considerable quantity of sugar in the urine. He was unable to decide whether this was due to the method of treatment or an intercurrent complication.

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A NATIONAL BOARD OF HEALTH.

THE President of the United States, in his recent message to Congress, formally and forcibly recommends the establishment of a National Board of Health, or National Officer, having under his control or advice matters pertaining to the protection of the country against pestilence and disease.

It can be easily seen, by the wording of his recommendation, that the establishment of a new Department of Government is not intended or considered at present necessary. This is the view which has been taken by leading sanitarians all over the country, and is the one that has been voiced by the Academy of Medicine in its carefully prepared bill.

There is little doubt that, with the generous and united support of the profession, the Academy bill, or one of similar tenor, could soon be made a law. It is equally certain to all acquainted with the feeling at Washington, that the attempt to establish at once a new department and a new cabinet officer would fail. No such thing has ever yet been done since the foundation of the Government. The Department of Agriculture, for example, for many years was simply a Bureau, and had its usefulness tested in this way.

If medical opinion cordially supports the project for a Bureau, it will get it; the rest will come in good time.

THE ORAL EDUCATION OF THE DEAF.

THE *Churchman* for December 1st contains an illustrated article by S. Millington Miller, M.D., on the above topic. The writer defends, with a considerable array of facts, the superiority of the new oral system of educating those congenitally, or otherwise, afflicted with dumbness.

The particular facts which he employs with most telling effect are, first, that the intermarriage of deaf men and deaf women, necessarily thrown together by the manual sign-alphabet system, produces children a large proportion of whom are congenitally deaf; and, second, that orally educated deaf persons can mingle without disability with the world at large, while the manually educated cannot. He also points out that all Europe is oral, and that America is lagging instead of leading.

It seems that some eleven years ago that very distinguished physicist and inventor, Dr. A. Graham Bell, announced that a series of investigations pushed in all directions, and as exhaustive as he could make them at that time, showed that one-third of the total number of children of deaf and dumb parents were congenitally deaf. This means that they are also dumb, so far as articulate speech is concerned. In other words, he had been forced to the conclusion that the method of instructing the deaf then mainly in vogue (by the manual alphabet-sign system), isolated deaf men and deaf women from society in general, facilitated their intermarriage, and was therefore developing a deaf and dumb species of the human race.

Since that paper appeared, statistics bearing on this subject multipled exceedingly, and they have all been sent to a gentleman who is an instructor in a manual institution, Dr. Fay, of the Gallaudet College, in Washington.

Those interested in such matters have been long expecting the publication of these reports, but their appearance has been most persistently delayed.

Within the past few weeks, however, Dr. Fay has written to the *Philadelphia Press*, stating that he is now busily engaged in sorting out and arranging this interesting matter, and will publish it at the earliest possible moment. It was decided by those who advised the placing of it in Dr. Fay's hands, that he was the person most competent to handle the subject.

According to conservative authorities there is one deaf person in the United States to every fifteen hundred units of population. Others place the proportion as high as one in every twelve hundred. We take it for granted, therefore, that there are some fifty thousand deaf persons in round numbers, in a total population of sixty-five million people. As there are at least ten persons more or less directly interested in the welfare of each deaf person, we have a total of half a million people to whom the method employed in educating a person so afflicted is a matter of vital interest. Two-thirds of these fifty thousand deaf persons were either born deaf or have become so under the age of two years. They are, therefore, dumb as regards articulate speech.

There have been various systems invented for the education of the deaf. One of the earliest references to the treatment of the deaf occurs in Bede's History, where Bishop John is spoken of as curing "a dummy man by blessing of him." The earliest schools for the instruction of the deaf were those of Pedro Ponce de Leon, in Spain, and of Jerem Garden, in Italy. Both of these men flourished in the sixteenth century, and their method of instruction in both cases was oral.

The cure of the deaf was universally regarded at that time as a miracle, and its instances were sedulously fostered as such by the Roman Catholic Church.

Jean Paul Bonet introduced and taught the single-hand alphabet in Spain in the first half of the seventeenth century. In the latter part of the eighteenth century three great schools were started: that of the Braidwoods, in Edinburgh; that of Samuel Heinecke, in Germany; and that of the Abbé de l'Épée, in France. The Braidwood system was a mixed sign and oral education, and was carried on by the family of that name for years as a sort of trade monopoly. Samuel Heinecke taught pure oral speech. The system of the Abbé de l'Épée consisted entirely in a series of conventional and pantomimic signs. Among the latter were included the drawing together of

the shoulders and shivering to indicate "feeling cold;" nodding the head to express assent, and shaking it as a sign of dissent. Besides such natural signs as these, the benevolent Abbé invented a number of conventional or arbitrary signs to express certain ideas. The most primitive races of mankind conversed in signs, and some of these earliest pantomimic signs still survive among civilized people, and are likely to last forever by reason of their terse expressiveness.

So it occurs that some of the most natural and forcible of the Abbé signs are still taught in connection with the one-hand alphabet. The letters of this alphabet are formed by the rapid juxtaposition of the fingers of one hand. They are arbitrary letters, not at all like the stately and rounded capitals of the copy-book, but still the child learns by their combination to spell out words and form sentences, and so to converse with other deaf children similarly instructed, and with its teachers. In a manual-sign school, speech is regarded as an accomplishment. The graduate of a manual school can only communicate with those unacquainted with his language—signs—by means of a writing pad.

But *revenons à nos moutons*. It was the general belief of continental Europe at the time when these great schools began their career, that mentality, or thought, could not be successfully carried on by any other medium than that of articulate speech. The system of l'Épée was therefore a startling innovation, as he had taught the oral system previous to his elaboration of the sign method.

The first American mover in this same benevolent purpose to remedy a prevalent affliction of humanity was Francis Green, who flourished in the latter part of the last century in Boston. He secured statistics showing the existence at that period of at least seventy deaf folk in Massachusetts. And he made strenuous efforts to start a school for them in Boston, but unsuccessfully.

Early in the present century Col. Bolling, of Virginia, two of whose children were deaf, made arrangements with the Braidwoods to send one of their number to this country who should found a school in America, and thus allow two continents the privilege of their monopoly.

In 1817, Dr. Thomas Gallaudet was sent abroad from Boston to study the Braidwood system, but its founders were so economical of their monopolistic right that the Doctor wended his way to France, visited the manual school of the Abbé de l'Épée, then conducted by his successor, the Abbé Sicard, spent several years in Paris, and brought back with him the deaf-mute Laurent Clerc as an assistant in the school then opened in Hartford, Conn.

The oral method was never introduced into America until 1887. In the following year the president of the National Gallaudet College in Washington called together in that city a meeting of the American manualists to take action against the new heresy. But the seed had been planted in a good soil and grew.

In 1880, a great convention was held in Milan, Italy, to settle forever in Europe the question of how the deaf should be taught; to arbitrate between Purist (oralists) and Non Purists (manualists). Dr. E. M. Gallaudet was present at that convention. Since that day every child in Continental Europe who is deaf has been taught by the pure oral system. The very school of de L'Épée has become an oral school.

But matters were by no means so easily cut and dried in England, until some five years ago, when a Royal Commission was appointed by the Crown and experts summoned to London at the expense of the English Government. Dr. Bell and Dr. Gallaudet went from America. The decision of this Commission was that every child who was thus afflicted in Great Britain should be taught for one year by the pure oral method. And only then be turned back into the manual sign system if it was clear that the oral system was not suited to its individual requirements. This country is therefore now going through the same scientific birth-pangs as did Continental Europe before the 1880 convention of Milan. "Verbum sapientibus" would seem to be the only criticism needed.

There are practically only two methods in vogue at the present day for teaching the deaf—the oral method (teaching by and through articulate speech), and the manual-sign alphabet method. Under both methods the child is taught writing, composition, arithmetic, spelling, geography, and all the English branches. The methods differ distinctly in that the oral system endows its graduate with articulate speech, and that the manual-sign system does not.

THE MODERN TREND OF GERMAN MEDICINE.

It used to be the reproach of medical science in Germany that it was not practical, that its students concerned themselves little with what should be the end and aim of the physician, namely the cure of disease, the relief of suffering, and the saving of life. Once the diagnosis made, all interest in the patient ceased, unless indeed he chanced to die, when he again became an object of interest for pathological purposes. The reproach was not undeserved, although it was somewhat exaggerated. But now things have changed, and a question of therapeutics arouses as great interest as did formerly one of pathology. This change is well illustrated by the comparative sale of two subscription works now being issued in the German language. One, edited by Penzoldt and Stintzing, devoted chiefly to the treatment of disease, is having, so we are informed, a very large sale, while the work edited by Nothnagel, the tendency of which is chiefly pathological, is meeting with but indifferent success. The cause for this change is doubtless the hope of cure that has been aroused by discoveries in bacteriology. Formerly it was nearly all guess-work and empiricism, but now there is a basis upon which to build a science of therapeutics, and inspired with the hope of success, the German shows that he is just as willing to save his patients as is anyone else, provided he has an incentive for trying.

Garbage Cremation.—According to the *Inventive Age* there are now fifty-five towns and cities in England which destroy their garbage and solid refuse by burning, using an average of about ten furnaces each for that purpose. The combustion of the material is used for the generation of steam, by which the streets are electrically illuminated, and other cities are reported to be considering the propriety of reducing their municipal expenses by this means.

News of the Week.

President Cleveland's Recommendation of a National Board of Health.—President Cleveland, in his message to Congress, makes the following recommendation: "I am entirely convinced that we ought not to be longer without a national board of health or national health officer charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease. This would involve the establishment, by such board or officer, of proper quarantine precautions, or the necessary aid and counsel to local authorities on the subject, prompt advice and assistance to local boards of health or health officers in the suppression of contagious disease, and in cases where there are no such local boards or officers, the immediate direction by the national board or officer of measures of suppression, constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases; and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities, and the measures which should be adopted to secure their enforcement. There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference, with a view of adopting means of mutual assistance. The creation of such a national health establishment would greatly aid our standing in such conferences, and improve our opportunities to avail ourselves of their benefits. I earnestly recommend the inauguration of a national board of health or similar national instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people."

The Cause of the Czar's Death.—We have received a copy of the official notice giving forth the nature of the malady to which the Czar succumbed. The diagnosis made by the physicians in attendance, Drs. Leyden, Zakharin, Girsh, P. Popoff, and Weliaminoff, was confirmed in the main by the results of the autopsy performed the following day. This diagnosis was "chronic interstitial nephritis with secondary disease of the heart and vessels, and hemorrhagic infarction of the left lung with secondary pneumonia." The following is a translation of the report of the autopsy: On October 22, 1894, at 7.30 o'clock in the evening, we, the undersigned, upon the occasion of embalming the body of the Emperor Alexander Alexandrovich, asleep in God, found the lesions described below. There was considerable œdema of the subcutaneous connective tissue of the lower extremities, with a punctate redness over the left leg. In the left pleural cavity was 200 c.c. of serous effusion of a reddish color; in the right cavity 50 c.c. of a similar fluid. There was an old fibrous cicatrix at the apex of the right lung, and this lung was somewhat œdematous; in the left lung there was œdema of the upper lobe and a hemorrhagic infarct in the lower lobe, and this lobe was also congested and contained very little air. The infarct was situated at the upper edge of the lower lobe and presented a triangular form on section, measuring 1½ ctm. in length by 1 ctm. on cross section. In the pericardium there was 50 c.c. of a blood-stained serous effusion. The heart was considerably increased in size, measuring 17 ctm. in length and 18 ctm. in width. In the subserous cellular tissue there was a large amount of fat (lipomatosis cordis). The left heart was dilated and the wall of the left ventricle was hypertrophied (2½ ctm.); the muscular tissue was pale, flabby, and of a yellowish color (degeneratio adiposa myocardii). The muscular wall of the right ventricle was thinned (6 mm.), and of the same yellowish color. The valvular apparatus was perfectly normal. In the abdominal cavity was about 200 c.c. of serous fluid. There was a large collection of gas in the stomach and intestines. The liver was slightly enlarged and greatly congested. The kidneys presented the following measurements: left, 16 ctm. in length, 7 ctm. in width, and 4 ctm. in thickness; right, 15 ctm. in length, 6½ ctm. in width, and 4 ctm. in thickness. The capsules were of ordinary thickness and not adherent. The surface of the kidneys was finely granular and of a dark-red color. The organs were not noticeably hardened. The cortical substance was reduced in thickness (6 to 7 mm.) and yellowish, the medullary portion was dark-red in color (nephritis interstitialis cum atrophia substantiva corticitis venum granulosa). In addition there was a serous cyst 3 mm. in diameter in the left kidney. Upon a basis of what has been above described, we conclude that the Emperor Alexander Alexandrovich died from paralysis of the heart due to degeneration of the muscle of the hypertrophied heart, and interstitial nephritis (granular atrophy of the kidneys). The report is signed by Drs. Klein, Zernoff, M. A. Popoff, Altukhoff, and Bielousoff.

Professor Baginsky and Antitoxin.—Professor Baginsky, of Berlin, writes concerning his article in October 6th issue, and desires the following correction:

Instead of: "It was difficult to ascertain the cause of the disease: Twenty-five cases which had been exposed to diphtheria were carefully examined a number of days, and all developed diphtheria. As they were examined daily, they were attended when the first symptom appeared. Not one of these developed nephritis nor cardiac trouble. Their sisters and brothers, who had been previously admitted to the hospital, some as severe cases, died. All twenty-five cases were discharged cured."

The above should read thus: "It was extremely difficult to ascertain the real cause of the disease from the relatives. We have had a number of children, twenty five in all, brought to us on the same day that their brothers and sisters were admitted as diphtheria patients, carefully examined them, and found these children perfectly healthy. These children were brought to us for inspection daily, and took sick some on one, two, or several days afterward. So that in these twenty-five cases we are really depending on proper statistics in the beginning of the disease. All of these latter patients got well and were discharged cured. In not a single case did any symptom of cardiac or nephritic complication manifest itself. Whereas, the brothers and sisters that were first brought to us developed not only severe types of diphtheria, and some proved fatal."

Statistics in the Medical Department of the Navy.—The new form of statistical report recently issued by Surgeon-General Tryon will not only be appreciated by the medical corps of the navy, but by the profession at

large. The nomenclature of diseases (adopted by the Royal College of Physicians and Surgeons, England) in use in the navy for many years has been abolished, and a classification substituted on the basis of modern requirements. The new system, commencing January, 1895, will enforce interesting statistics rendered valuable on account of their accuracy.

Charles T. Chase, M.D., of Brooklyn, died on November 5th, aged sixty-three, the cause of his death having been chronic interstitial nephritis. He was a well-known practitioner of forty years' standing in Brooklyn, and the son of Dr. Charles Chase, of the United States Navy.

Dr. Hedges's Paper on Diphtheria.—By an oversight of the printer the article of Dr. Hedges, on page 682, was not indexed.

Football at Springfield.—We must confess to a distinct disappointment at the way in which the Harvard-Yale game of football at Springfield was conducted this year. The promise of reform in rules and discipline has not been kept. The number of disabled men was unusually great, and there were several serious injuries; that these were in every case the result of "accidents" it seems to be difficult to admit. The rules may be amended to any extent, but it profits nothing if they are not or cannot be enforced. The penalty for slugging, or for purposely attempting in any way to injure an antagonist cannot be too severe or too severely enforced, if this game is to be continued as a competitive sport among college men. That a player may with impunity jump on an antagonist prostrate on the ground with the ball, after the whistle has been blown, and dislocate his victim's clavicle, should be an impossibility. What the umpire does not see, however, is supposed not to occur. In so far as the umpire is blind he may, at least, in that particular, be said to be a representative of justice; the best pair of eyes may really miss some of the incidents of the gridiron. Had the penalty of disqualification, however, been rigidly enforced from the beginning of the first half of this game, there would, we are convinced, have been fewer subsequent "accidents."—*Boston Medical and Surgical Journal.*

Dr. William Gay Brockway died November 28th, at 181 West 134th Street, New York, aged thirty-four. He was graduated from the University Medical College in 1887, and practised in Harlem until December last, when he went to Florida for his health.

Dr. George R. Brush, of Sayville, L. I., died of diabetes on November 29th, at Colorado Springs, aged fifty-nine. Dr. Brush was born at Smithtown, L. I. After his graduation from the College of Physicians and Surgeons in 1858, he practised in this city and Sayville until September, 1861, when he entered the navy as assistant surgeon. He passed through the successive grades until he became Medical Inspector in 1889, which rank he held at the time of his death. He was detailed to the Brooklyn Navy Yard in 1892.

A New Woman's Hospital.—The authorities of the Woman's Hospital, at Park Avenue and Forty-ninth Street, New York, are to erect a new hospital in Central Park West, having acquired the block between Ninety-second and Ninety-third Street, the plot extending back two hundred and fifty-nine feet in Ninety second Street and two hundred and fifty in Ninety-third Street, with the exception of one parcel of twenty-five feet in the latter street. Most of this property has been actually purchased and the remainder is under contract. The cost of the plot is $331,000.

St. Mark's Hospital, New York.—Dr. H. J. Schiff has been appointed attending surgeon to St. Mark's Hospital.

The New Surgeon-General of New York State N. G. is Dr. M. C. Terry, of Utica. He is a graduate of the Cleveland, O. Homœopathic Hospital College in 1872.

The Montefiore Home for Chronic Invalids.—The new wing of the Montefiore Home was formally opened on November 29th. The occasion was also the tenth anniversary of the founding of the institution.

Bequests to Hospitals.—The late Henry Keney has left $50,000 for the Hartford Hospital.

The Manhattan Dispensary, of this city, is the fortunate recipient of a bequest of over one hundred thousand dollars.

There seems to be Considerable Trouble in the National Association of Railway Surgeons. The association issues a special proclamation warning its members against the proposed American Academy of Railway Surgeons. Certain members of the N. A. R. S., in their efforts to establish a rival society, says the resolution, "have used fac-similes of letterheads of the railway surgeons for the purpose of producing a false impression as to their standing with the members of this (N. A. R. S.) association and its official organ and with railway surgeons, etc." Gentlemen, this is a N. A. R. S——ty trick, and, in the words of another, "You shouldn't ort to have done it." We believe in fair play if you are going to fight.—*Medical Examiner.*

A Year's Immigration.—The annual report of Herman Stump, United States Superintendent of Immigration, shows that during the fiscal year ended June 30, 1894, 288,020 immigrants arrived in this country, of whom 285,631 were landed and 2,389 debarred from landing because of being under contract to perform labor made previous to their arrival. Of the immigrants landed, 96,000 were destined for New York State, 42,000 for Pennsylvania, 25,000 for Massachusetts, and 22,000 for Illinois, the others being scattered throughout the United States, no other State receiving a greater number than 10,000. Immigrants destined for southern States, all told, did not exceed 12,000. Of the immigrants over sixteen years of age, 41,000 could not read or write.

A German Temperance Society.—The German Society Against the Abuse of Alcohol held its annual meeting on September 18th and 19th, at Cassel. Among the subjects discussed were Sunday afternoon closing and the influence of women in the temperance movement.

Dartmouth Medical College held its annual commencement November 20th, graduating a class of twenty-seven.

An Epidemic of Diphtheria prevails in Yonkers, N. Y. On November 23d there were fifty-six cases in the city.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON GENERAL MEDICINE.

Stated Meeting, November 20, 1894.

W. H. Porter, M.D., Chairman.

Specimens illustrating varieties of biliary calculi were presented by Drs. George P. Biggs and Morris Manges.

A Résumé of the Subject of Biliary Calculi.—Dr. Thomas Southworth read a paper on the above subject, and in opening the discussion, Dr. Kinnicutt said that the chemistry and symptomatology of biliary calculi had been described very thoroughly in Dr. Southworth's interesting paper. He had little or nothing new to say, yet it might be useful to refer to some of the difficulties of differentiation between certain lesions of the larger ducts and gall bladder, produced by impacted calculi. He would first refer to the differentiation between hydrops in the sense of a dilatation of the gall-bladder through obstruction in the cystic duct, and empyema of the gall-bladder on the one hand, and a catarrhal cholangitis produced by impacted biliary calculi in the common duct, also causing enlargement of the gall-bladder.

A differential diagnosis was very desirable, as in the case of empyema, at least, prompt surgical interference was indicated, while in dilatation with catarrhal cholangitis, complete recovery frequently occurred without operation. Although both hydrops and empyema of the gall-bladder, as a rule, were produced by impacted calculi in the cystic, rather than in the common, duct, and hence were unattended with jaundice, nevertheless impacted calculi in both cystic and common ducts were not of uncommon occurrence.

In both empyema and catarrhal cholangitis, paroxysms of chill, fever, and sweating of an irregular, or quotidian, or tertian, or quartan type might be present. It was important to bear in mind that such symptoms occurred, as a rule, in catarrhal cholangitis from impacted stones. The fever often rose to a very considerable height. In a case which was recently under his observation, a severe chill was immediately followed by a rapid rise of temperature to 105° F., and again succeeded by profuse sweating. Similar paroxysms of a quotidian type occurred over a period of three weeks, and on operation several large stones were found impacted in both the cystic and common ducts, without either a trace of suppuration or the evidence, on the closest scrutiny, of any lesion of the mucous membrane. The autopsy, the patient dying of uræmia, rendered a very careful study of the ducts possible.

The true nature of hepatic fever associated with catarrhal cholangitis yet remains unsettled. It very certainly is not of a septic character. On the other hand, an empyema of the gall-bladder may exist with an entire absence of chill, fever, and sweating. An interesting case of this kind recently has been reported by Dr. Osler, in which 150 c.c. of pus were removed from the gall-bladder. A possible sign of differentiation between hydrops and empyema of the gall-bladder, on the one hand, and dilatation from an impacted calculus producing catarrhal cholangitis and hepatic fever, on the other, may be looked for in the much greater enlargement of the gall-bladder in the former instances. It is a clinical fact, moreover, that in obstruction of the common duct, even when the dilatation of the gall bladder is found to be very great, the physical signs of its enlargement are frequently unappreciable. The explanation I am not prepared to give, unless it be that through the distention of the smaller ducts with bile in these cases, and the consequent enlargement of the liver, the relations of liver and gall-bladder are somewhat altered. A second point of differentiation in favor of a catarrhal cholangitis with dilatation, is in the persistence of the ague-like paroxysms over a very considerable period of time; cases are not uncommon where such symptoms extend over an interval of weeks, and even months.

In conclusion, Dr. Kinnicutt expressed his views in regard to the indications for surgical interference in the different conditions he had referred to. In simple hydrops from obstruction in the cystic duct or neck of the gall-bladder, the indications were not very apparent, although the passage of a large stone through ulceration into the duodenum, and possible intestinal obstruction, should be borne in mind. In empyema of the gall-bladder, speedy surgical interference was demanded. In impaction of a calculus in the common duct, the presence of hepatic fever, even extending over a long period, did not indicate operation in his judgment and from his experience, unless the health seriously suffered thereby. Complete recovery was entirely possible in such cases, even after many months of persistence of these symptoms. A number of cases with this outcome had passed under his personal observation.

Dr. W. Gilman Thompson said that he was pleased to see the specimens presented, for in addition to their general interest some of them, by their great size, showed that it was possible to exist in health without the use of a gall-bladder, as they entirely occupied its cavity—a fact that had also been demonstrated by the removal of the gall-bladder without serious results. In the treatment of gall-stones it was possible that glycerine and ether might dissolve the stone to a slight extent, but he had not secured favorable results from the use of olive oil; and as the oil is not taken up by the blood-vessels, but by the lymphatics, one must conclude that the oil never reaches the gall-bladder. Most of the "gall-stones" found in the stools after giving oil, have turned out to be nothing but inspissated oil. The subject of dietetic treatment was one worthy of careful investigation, but one on which little had been written. It is a matter of interest to find whether cholesterin is a force-producer that can be used in the system, or is only a waste product. It seemed to him that it is not essentially a waste product, for it exists in substances where we would not look for waste matter. It is found in eggs, in pulses, and other vegetables, in red blood-corpuscles, and in the brain, and because it is present in these substances it could reasonably be claimed that it is not a waste product. The fact that it is found in the fæces and rarely in the urine, might be cited to prove that it is waste material, but the probability is that it never appears there in any greater quantity than is taken into the system with the food. As cholesterin is the substance from which gall-stones are chiefly formed, it seems desirable to avoid foods containing it, in the ordering of dietetic treatment.

Dr. Thompson further said that in explanation of the formation of gall-stones he did not see any need of a bacterium, for we look to the precipitation of certain ingredients of the bile as the true factor, and lime salts in excess will do this. A large quantity of water should be drunk, as it dilutes the bile and prevents further precipitation.

Dr. Beverley Robinson said he thought that many cases were diagnosed as gall stones that were not such; that there might be a distention of the gall-bladder and severe colic without the presence of stone in the gall-bladder or the ducts, and that such distention was often wrongly attributed to gall-stones. He further said that he did not believe gall stones occurred in young people, unless in exceptional cases; also that there could be spasms of the gall-bladder and hepatic duct, producing pains similar to those of biliary colic.

Dr. Robert Abbe said he believed that the surgeons were as conservative as the physicians, though they were often looked upon as less conservative. He was confident that patients were sometimes operated upon for the removal of gall-stones who would recover without the operation, yet there were cases in which an operation

was a necessity. He had operated on about fifteen very bad cases, and cited others in which an operation seemed demanded, but the patients got well by passing the stones. The operation was a comparatively simple one, for there was no danger of a hernia, and drainage could be secured without trouble. Dr. Abbe emphasized the point that, opening the abdomen and examination of the gall bladder was not enough for a sure diagnosis of stone, for the gall-bladder was always found to contain considerable bile, and this would interfere with the discovery of the stones. The operator could not be certain until he had opened the gall-bladder itself. He had seen a case that had been operated upon and no stones found, but on a second operation and opening the gall-bladder seven stones were found. He said that he would hesitate most in operating on the aged who had suffered from pains for a number of years, and also in operating upon the young. He cited a case of an expert cook who was accustomed to serve in wealthy families, but biliary colic became so bad every few weeks that it was impossible to retain a position. He thought that in such a case it was very advisable] to perform an operation. Dr. Abbe also thought that dietetic treatment was very important. Manipulation was often of service, and in one case, that of a man sixty years of age, the use of an ice enema and manipulation caused the patient to pass a number of stones, and thus gave relief.

Dr. Leonard Weber gave the history of several interesting cases, and said that he had used an enema of cold water with very good results, but had never used ice for that purpose. One patient had passed four or five hundred stones; in another patient he had found a stone surrounded by cancer, and in another there was a cicatrix encircling the cystic duct.

Dr. Southworth, in closing, said that glycerine was supposed to act by increasing the action of the hepatic cells; that olive-oil probably reduced the size of the formed stone; that it was believed the cholesterin stone was formed from the mucus of the bile-duct and gall-bladder; and that a stone could grow to large size in a duct in a few days.

Clinical Department.

A CASE OF CYSTIC DEGENERATION OF THE CHORION.[1]

By L. W. ZWISOHN, M.D.,
NEW YORK.

On January 3d, I was called to see Mrs. R. S——, who gave the following history: aged twenty-three; married three years; has one child living, aged nineteen months; is greatly emaciated, has headache, sleeplessness, and great debility. She was suffering from severe vomiting and thought she felt life; on bimanual examination I found the uterus very much enlarged and the os closed —to all appearances a normal pregnancy. I advised perfect rest, and prescribed an anti-emetic. On January 10th I was summoned in haste to see the patient. A hemorrhage had occurred and I deemed it necessary to tampon the vagina; I made cold applications and the hemorrhage was controlled; the vomiting still continued and I ordered moderate diet with cold drinks, which afforded the patient some relief. On January 25th a second hemorrhage occurred. I tamponed again, and six hours later the os was well dilated. On introducing the finger to examine the condition of the uterus a sudden and rather severe hemorrhage occurred. I had no time to prepare a proper tampon, but seized the nearest piece of cotton at hand, and packed it into the vagina. Two hours later an hydatidiform mole was removed piecemeal, with the fingers of one hand in the uterus, and the other hand making pressure from above externally. The friends would not allow the use of instruments, and as there was no elevation of temperature I left the case to nature, merely watching developments. Two days later the mother of the patient presented to me the placenta, which was expelled during the night. Since then the patient has been doing well. Now the main points of interest are:

1. Is vomiting one of the main symptoms of hydatid cyst? Thomas, Schroeder, and Tait do not mention it. Playfair says there is constant vomiting, and Polk has reported a case which is similar to the case under consideration.

2. Do we have positive signs to help in the diagnosis of hydatidiform mole? and what are they?

3. Do they reappear in the same individual, and if so, how frequently? for how long a period is the mole retained in the uterus? Tait reported a case in which five moles were removed from the same individual at different periods. He says a mole is rarely retained more than five months.

4. Is curetting advisable in cases of hydatid mole? Thomas, Schroeder, and Tait do not mention this operation; Polk performed it in the case he reported, but in that case he says the mass had a decided odor of decomposition.

5. Is it possible that hydatidiform mole should occur independently of conception?

To answer these important questions, I believe we have to consider the etiology of the hydatid mole. The chorion remaining attached to the uterine walls after the expulsion or death of the embryo sometimes undergoes a peculiar metamorphosis; it differs, however, from the true hydatids in absence of the acephlocysts and is also unlike it in appearance and form; the uterine hydatids consist of little sacs in a series as if strung together, hence their grape-like appearance; the true hydatids are closed sacs, one within another. Giers and Graily Hewitt say it always follows death of the fœtus. The fact that the morbid growth may owe its inception to fœtal disease seems demonstrated by the cases[1] where a healthy fœtus may be developed at the moment with the hydatid mole. Virchow thinks it originates in a morbid state of the decidua, while others attribute it to some blood dyscrasia on the part of the mother, such as syphilis. The latter believes that it may occur more than once in the same person, and that the exciting cause of the hydatid mole is a morbid maternal condition. The probability is that both views may be right, the disease sometimes following the death of the embryo and at others being the result of obscure maternal causes.

McClintock says that hydatids may be retained in the uterus for many months or years, or a portion only may be expelled and the residue may throw out a fresh crop of vesicles to be discharged on a future occasion. This may be important from a legal point of view, for instance, in the case of a widow or a woman living apart from her husband. It is possible, as Playfair points out, that true entozoa may form in the substance of the uterus, which being expelled per vaginum might be taken for the result of cystic disease. Hewitt also relates a case of an unmarried woman in whom true hydatids from the liver had extended to the peritoneum and burst through the vagina.

In such cases the woman's reputation may demand that a careful examination of the cyst and its contents should be made.

Symptoms.—The first physical sign is the rapid increase of the uterine tumor, which does not correspond in size to the supposed period of pregnancy. Leishman attributed much importance to the unusual hardness or density of the uterus. The uterine tumor is often irregular, and constant vomiting may be present. None of these are, however, positive signs except the presence of cysts in the watery and bloody discharge.

Dr. Holperin related to me two cases that came under his observation in which there was hemorrhage in both,

[1] Read before the Harlem Medical Association.

[1] Spiegelberg, Lehrbuch, p. 332.

and vomiting in one. In the second case he was unable to tell, as he was called to deliver the mole and could not obtain the history of the case.

Treatment.—The uterus should be cleared of its contents as soon as possible, and on account of the occasional firm adhesions of the cystic mass to the uterus too energetic attempts at complete separation should be avoided.

Summary.—From the different opinions above quoted we are justified in coming to the following conclusions: 1. Persistent vomiting is one of the principal symptoms, but not a certain sign. 2. The only positive sign we have is the presence of the cysts in the watery discharge. 3. They frequently reappear in the same individual, but for what period they are retained in the uterus it is impossible to say. Although Tait says it is rarely retained more than five months, it is quite possible, as McClintock points out, that a portion may be expelled and the residue may bring out a new crop. Thus the five different periods in the same person of Tait may all be from the first mole. 4. Curetting is advisable only where the hemorrhage continues, and then with a dull curette, as the parenchyma of the uterus may be affected and its walls very thin. 5. Hydatidiform mole is essentially connected with pregnancy.

326 East Seventy-eighth Street.

MENSTRUATION AND PREGNANCY — IMPACTION OF A FOREIGN BODY IN THE ŒSOPHAGUS.

By R. H. PHILLIMORE, M.D.,

COOKSHIRE, CANADA.

The following two cases are perhaps deserving of record:

Case I.—On October 5, 1893, I was hastily summoned, at 2 A.M., to attend Mrs. C——, an anæmic, hard-working woman, aged thirty nine, and the mother of eight children. She was suffering from severe pains, with uterine hemorrhage. Examination showed the organ to be considerably enlarged, with tenderness on pressure. Naturally the first question to present itself was, was the patient pregnant, and were the symptoms those of threatened abortion? She emphatically declared that she was not pregnant, notwithstanding that the sapient matrons in attendance were unanimous in their belief that she was. Suitable agents were administered, and the vagina was tamponed. I continued treating her almost daily, up to the end of January, 1894, when the severe hemorrhages, which had returned periodically, ceased; and, though the menstrual epochs continued regular, they were always attended with pain and considerable constitutional disturbance.

From this time until the end of September, 1894, I saw Mrs. C—— only on a few occasions, when she informed me that the condition of the uterus remained practically unchanged—it was still enlarged and tender, and menstruation was regular. Toward the latter part of this month she consulted me in regard to swelling of the extremities, with puffiness of the eyelids. Examination of the urine exhibited only a trace of albumin.

On October 6, 1894, I was again hastily summoned. "Mrs. C—— was flooding again." Upon examination I found the uterus apparently in the same condition, and the patient considerably "bloated." Menstruation, as I have previously observed, had been perfectly regular, and not so painful as on previous occasions. She complained, as before, of pains in the back and legs. External examination showed no change in the size of the uterus, but an internal examination revealed an os slightly dilated, with a tumor presenting. I informed the friends of the condition of the patient, but they, being well acquainted with the previous history of the case, ridiculed the idea of pregnancy, as also did the patient herself. On the morning of the 7th she was delivered of a female fœtus, measuring 8½ inches in length.

The following points in this case are interesting: 1, Signs suggestive of pregnancy on first visit, eventually proving erroneous; 2, pregnancy present when not suspected; 3, uninterrupted menstruation during pregnancy.

Case II.—On September 18, 1894, I was summoned to attend a child, aged eighteen months, who at 11 A.M. had swallowed an English farthing. Having placed the patient under an anæsthetic, an examination of the throat was made, but no obstacle was discovered, though a horse-hair probang was employed. The following day persistent vomiting ensued.

Patient was ordered milk with raw egg beaten up, solid food being persistently rejected. On this diet the child thrived. The parents having refused to allow another examination—although I repeatedly expressed the opinion that the coin was lodged in the throat—liquid diet was daily administered. On October 7th, nineteen days after the accident, the patient ate a quantity of grapes in addition to its liquid diet. This was followed by emesis, and the coin, considerably worn, was suddenly expelled. The patient at once partook of a hearty repast, consisting of solid food, and has now entirely recovered from the effects of its financial embarrassment.

That the coin was impacted in the œsophagus there can be no reasonable doubt, and the case is instructive as indicating the difficulty of detecting foreign bodies in this situation, and also the length of time which may elapse without injury to the tube in which they are lodged.

THE TREATMENT OF CARBUNCLE, WITH REPORT OF A CASE.

By J. MORTON HOWELL, M.D.,

WASHINGTON COURT HOUSE, O.

In the month of May of the present year, I was called to see Mr. R. S. S——, a man little past three score of years. I had been treating him for some months previous, for a severe prostatitis and functional albuminuria. There had been but little loss of flesh as a result of the diseases named, but the patient complained of weakness, and was noticeably void of that vitality which was so characteristic of him in former days. When I arrived, he told me that he was suffering much pain in the small of his back, and described it as a dull, heavy ache with intense burning.

Upon examination, I found a circumscribed, oval, and highly inflamed induration, situated immediately to the left of the spinal column, at the juncture of the dorsal with the lumbar vertebræ. It measured 5.75 inches in its longer diameter, and was discharging pus from a half dozen different openings. The sieve-like appearance presented by the skin surface, together with the form of the neoplasm and the character of the pain, made the diagnosis one of ease.

Owing to the age and debility of my patient, together with kidney and prostate trouble alluded to, the prognosis could be but grave. To adopt a form of treatment which would be most sure to land my patient upon the side of recovery, was my desire.

An examination of authorities shows that comparatively little is written upon this subject, which furnishes the mortality that it does.

The modes of local treatment, as suggested by the various writers, differ widely. For instance, Ashhurst and the "Reference Handbook of the Medical Sciences," recommend, among other remedies, poultices, while they are condemned by the "American Text-book of Surgery."

Without noticing further the treatment as found in our medical works, we will give our treatment of this case, which we believe may be made applicable to any

case. If it proves to be an instrument in the saving of a life, or an assistance to our brother practitioner in his mission to do good, it will have served its purpose.

After freezing the parts, two incisions were made, crossing each other at right angles, being carried sufficiently deep to include the healthy tissue beyond the limits of the disease. Bleeding was tolerably free, and after sponging the parts well with hot water (previously boiled) a dressing was made by application of dry boracic acid (Wyeth's impalpable powder) over which was placed a thick layer of antiseptic gauze, previously saturated with hot carbolized water. Over this gauze oiled silk was placed, which retained the moisture almost to perfection. The burning at once ceased, the pain disappeared, and the patient was made so comfortable, that in forty-eight hours he was doing his regular choring about house and barn. The dressing was changed once in every twenty-four hours. He was given a ferruginous tonic, and placed upon a light but nutritious diet.

I discharged my patient in eight days from my first visit.

A CASE OF NEPHRECTOMY ON ACCOUNT OF NEPHROLITHIASIS AND PYONEPHROSIS.

By HERMAN MYNTER, M.D.,

PROFESSOR OF SURGERY, NIAGARA UNIVERSITY, BUFFALO, N.Y.

JOHN S——, aged twenty-two, entered the Sisters' Hospital on August 2, 1894, with the following history:

He had complained for the last seventeen years of periodical attacks of pain in the back and left lumbar region. Up to five months ago the attacks occurred about once in six or eight weeks, with free intervals, extended downward in left scrotum and thigh and could only be relieved by hypodermics of morphia. They would suddenly cease and hours afterward he would pass, with great pain, a whitish soft mass, which did not have the appearance of a stone, and then a profuse flow of scalding urine. During the last five months the above symptoms had increased in severity and become continuous. The patient had lost greatly in weight, suffered from profuse night-sweats, loss of appetite, occasionally a dry cough. The parents were healthy, but one brother had died of consumption. At the examination the patient appeared extremely emaciated and cachectic, with protruding cheek-bones and hectic flush. Weight, 101 pounds. There was great tenderness from pressure in left lumbar region, but neither anteriorly nor posteriorly, standing or lying, could any swelling or enlargement of the kidney be discovered. He was also somewhat tender to pressure over the right lumbar region. He passed about one quart of urine in the first twenty-four hours, half of which was pus. The urine had a color like chocolate, specific gravity 1,030, acid reaction, and was loaded with albumin. Microscopically nothing was seen but pus corpuscles.

By cystoscopic examination under cocaine anæsthesia and after preliminary irrigation of the bladder, an excellent view was immediately obtained of the fundus of the bladder. The mucous membrane appeared perfectly normal. The orifice of the right ureter was seen as a small oblique slit, through which a swirl of healthy urine passed every four or five seconds. Turning the cystoscope toward the orifice of the left ureter I saw what appeared to be a deep crater-formed ulcer, about two centimetres in diameter. Nothing appeared for two or three minutes, when suddenly a cohesive, thick, yellowish mass commenced to protrude through the crater, as thick apparently as a little finger. When about two inches of this mass had entered the bladder, it disappeared from view and was followed by a profuse discharge of yellowish pus, which quickly obscured the field. As it was evident from this examination that the patient suffered from a pyonephrosis of the left kidney and that the right kidney was healthy, nephrectomy was advised, although his condition was so miserable that it seemed impossible he could survive such an operation. The operation was performed on August 8th, under chloroform narcosis, the patient having been stimulated for a couple of days with hypodermics of strychnia, nitro-glycerine, whiskey, and rectal alimentation. The pulse was then 130, weak; temperature had ranged between 101° and 103° F. The incision was made along the erectus spinæ muscle ending near the crest of the ileum, combined with an oblique incision along the whole lower border of the twelfth rib. The kidney was almost wholly covered by the ribs, strongly attached to the colon and the surrounding tissue. During the process of enucleation, which was extremely difficult on account of the strong adhesions and its high position, my whole arm almost disappearing up to the elbow in the wound, a large abscess in the kidney itself was ruptured, from which a large amount of ill-smelling pus, estimated at one pint, escaped. The hilus was at last reached, the kidney brought out through the wound, two clamps attached on the hilus in order to finish the operation quickly, and the kidney removed. The ureter was as large as a finger. The wound was disinfected with corrosive sublimate, loosely packed with iodoform gauze and partly sutured. The patient left the table in a state of profound shock, pulseless and with clammy perspiration, but by active stimulation, he revived in a short time. The operation lasted about three quarters of an hour.

The kidney preserved its general contour, but was enormously enlarged, its volume being about six times that of the normal. It measured seven inches in length, four in width, and three in thickness. Its weight was twenty-eight ounces; but as at least one pint of pus escaped, its weight must have been about forty four ounces—two and three quarter pounds. The capsule was adherent and blended with the renal structure. The color in no place was that of a normal kidney, but that of fat and fibrous tissue.

The surface presented numerous large circumscribed swellings which on palpation were soft and fluctuating, and on incision were found to contain a thick, greenish, tenacious pus. On the posterior surface was a large abscess cavity, ruptured during the operation. On section no normal kidney structure appeared. The upper third was a mass of multilocular abscesses which intercommunicated and contained pus of the same character previously described. The middle third was a mass of fat and fibrous tissue; lying in the latter was a large triangular shaped stone, $1\frac{3}{4} \times \frac{3}{4}$ inch, of a greenish-brown color, irregular in shape, and with rough surface. The lower third showed two abscesses, the larger being three-fourths of an inch in diameter. In one of the abscesses in the upper part a rough irregular stone was found. The pelvis was greatly enlarged, full of pus, and contained several cohesive, yellowish masses of necrotic tissue impregnated with pus, like the one which was seen to pass with the cystoscope. Scarcely any traces of kidney tissue could be seen, and its function as a secreting gland had probably long ceased.

August 9th.—Temperature, $102\frac{2}{5}$° F.; pulse, 130. He has passed 19 ounces of urine since the operation, the last of which is perfectly clear and normal. He is extremely weak and is given $\frac{1}{60}$ gr. strychnia and $\frac{1}{100}$ gr. nitro-glycerine every three hours hypodermatically. He has taken one quart of milk during the night.

August 10th.—Temperature, 101° F.; pulse, 120; $28\frac{1}{2}$ ounces of clear normal urine. Patient takes lots of nourishment and rests well.

August 11th.—Temperature, $99\frac{1}{2}$° F.; pulse, 126; 31 ounces of urine. Clamps removed and cavity irrigated and loosely packed with iodoform gauze.

August 12th.—Temperature, 99° F.; pulse, 108; 27 ounces of urine. Patient takes solid food.

August 13th.—Temperature, 100° F.; pulse, 110; 32 ounces of urine.

He gradually improved, passed from 35 to 45 ounces of urine daily; pulse and temperature became normal.

August 23d.—The dressing was found saturated with

fecal matter, a fistula evidently having formed into the colon, but it healed in a couple of weeks.

August 25th.—The patient was sitting up; the large cavity had contracted so that only a small granulating fistula was left. His weight had increased to 105 pounds, he felt perfectly well and was discharged to his home.

September 22d. — Weight 137 pounds, a gain of 36 pounds; patient a picture of perfect robust health, urine normal, fistula closed.

October 1st.—Weight 140 pounds.

October 12th.—Weight 147 pounds, patient has gone to work in a machine shop.

The interest in this case is the ease with which the diagnosis was made by aid of the electrical cystoscope, and particularly the demonstration that the right kidney was healthy, and therefore an operation advisable. Only by operative means in two other ways—an exploratative laparotomy or an explorative suprapubic cystotomy with catheterizing of ureters, could the diagnosis have been cleared up, and there is no comparison between these methods and the simple cystoscopic examination, done without any danger to the exhausted patient. Cystoscopy necessitates, of course, that the bladder shall be able to contain five ounces of clear fluid and that the cystoscope shall be able to enter the bladder; luckily both indications were fulfilled in this case.

A second point of interest was the impossibility of feeling and palpating the enormous kidney before operation. I can only explain this by the strong adhesions of the lower segment of the kidney to the colon and surrounding tissue, by which the kidney was forced to enlarge upward and forward below the diaphragm. A third point of interest was the long time, seventeen years, in which the patient had suffered from nephrolithiasis without a distinct diagnosis having been made, and the rapid and perfect recovery that followed the removal of the diseased organ, the patient in seven weeks gaining 46 pounds in weight. I have during the last three years performed nephrectomy four times. Two operations were done on account of tuberculous kidneys. One of these died on the fourth day of suppression of urine, and the post-mortem examination showed the remaining kidney to be tuberculous. A cystoscopic examination would in this case probably have shown that the operation was contra-indicated. The second case recovered, but died half a year later of general tuberculosis of the urinary organs. The third operation was performed in October, 1892, on account of a large sarcoma of the left kidney in a lady fifty years of age. The patient recovered, and so far, two years after the operation, no relapse has occurred and she is in perfect health.

Longevity among Physicians.—One of the most curious statistical records that has been compiled this century is that by Dr. Salzmann, of Essling, Wurtemburg, on the average duration of life among physicians. He found in going over the ancient records of the kingdom, that in the sixteenth century, the average duration of life among that class was but 36 5 years—in the seventeenth century 45 8—in the eighteenth, 49 8, and at the present time they reach the favorable average of 56.7. It appears from the footnotes to the above that this very great increase in longevity is due to the disappearance of the "black pest," the introduction of vaccination, and the great diminution in the number of typhus epidemics, three classes of diseases which formerly decimated the medical practitioners.—*College and Clinical Record.*

The Gift of a Hospital.—M. Henri Schneider, of Creuzot, France, has built and presented to the town a new hospital, with accommodation for one hundred and fifty patients. The hospital was opened on September 18th, with religious ceremonies conducted by Monsignor Perraud, Bishop of Autun.

VERSION THREE WEEKS BEFORE DELIVERY.

By G. STARKE, M.D.,
NEW YORK.

I BEG to report the following case as of probable interest to the medical profession:

Mrs. J. T. S——, age at present twenty-four; height about five feet four inches; weight about one hundred and twenty five pounds. Four years ago she was delivered of a child at seven months, the baby living but twenty-four hours. Though a breech presentation, delivery at that age of fœtus was easy. Two years ago I delivered her at full term of a boy, also a breech presentation, with forceps, after a rather severe labor, the child being in a state of asphyxiation and only resuscitated after half an hour's work, after the method recommended by Dr. W. E. Forest in the MEDICAL RECORD of April 9, 1892. The boy at this date is hale and hearty.

Mrs. S—— again became pregnant, and having had her last menses December 5, 1893, expected to be confined about September 12, 1894. I saw her on September 8th, and examining her, found another breech presentation, of which fact I informed her, and it had a decided depressing effect upon her. I informed her that, in view of her having had a hard time with the boy, and his life at the time almost despaired of, if she consented I would endeavor to perform version and make an almost certainty of the child being born alive, knowing that she was very anxious for it, particularly if it should be a girl. She consented, and I performed version, by external manipulation alone, inside of ten minutes. Before leaving her, I assured myself by vaginal examination that the head was well placed in the pelvis, and the occiput anterior by external palpation.

On September 14th she sent for me again, fearing that the child had turned again to its former position during sleep, but upon examination found it to occupy the same position I had previously placed it in. She progressed without ill consequences till September 28th, when I was sent for at 8.30 P.M. Arriving at her house about nine o'clock, I was informed that the waters had broken half an hour before, as she was about to go out for a drive. Upon examination found the os dilating, the head presenting in the L. O. A. position. Though good pains did not set in till eleven o'clock, she was delivered of a girl baby at 12.30 A.M. on September 29th, and her progress since then has been uneventful.

The interesting circumstance in this case to me is that version, being intended to be performed only a day or two previous to the expected time of expiration of her pregnancy, was accidentally performed three weeks before delivery, a very unusual procedure. However, in this case with most gratifying result, saving the mother much pain and insuring a shorter labor, and saving me very much anxiety.

The lesson to be drawn from this case is that version can be performed much easier some time before labor sets in, than after the uterine expelling forces have begun to exert themselves, when the uterus usually resents any severe interference or manipulation by grasping the fœtus tighter, often necessitating anæsthetics, besides running grave risks of lacerating the uterine and fœtal tissues, and requiring at least two for the operation. I had a similar case of a transverse presentation some two years ago, where fortunately I was called in a day before the confinement and corrected the presentation, resulting in an easy labor.

I would recommend to all medical men having the advancement of their profession at heart, in all doubtful cases, and when possible, to examine their pregnant patients a week or two before their expected confinement, for the ascertaining and correction of presentations; the same as we are recommended to examine their urine for albumin to prevent complications.

1393 FRANKLIN AVENUE.

Correspondence.

BERIBERI AND BEANS.

To the Editor of the Medical Record.

Sir: In an editorial notice, Medical Record, Novem ber 17, 1894, of "beriberi in New Jersey," you speak of the "ill favored human cargo of a vessel from Navassa, which has entered port at Perth Amboy. There seems to be no doubt that faulty hygiene and lack of suitable food were the factors determining the outbreak. Beans furnished the principal food, it appears, during the two weeks' voyage, and, strange as it may seem, this is just the article of diet which Dr. Simmons recommended in a monograph on the subject in 1880."

As I had the pleasure of assisting the late Dr. Simmons in some of the details of that work, and as the above reference may give a wrong impression, please allow me the space to say that "there are beans and beans," and that in his monograph Dr. Simmons lays stress upon the peculiar kind of bean—a small red variety—that has long found popular favor in the management and treatment of beriberi, once so prevalent in Japan. The large common starchy bean has no value, and I think he so states it, though I have not the paper by me for reference.

In more recent years an unlooked-for confirmation of the value of this bean as a food in cases of beriberi is found in the fact of its large relative amount of albuminoid nitrogen composition. It has been ascertained that the chief element in the production and prevalence of the disease is the lack of the nitrogenous foodstuffs—particularly of the fresh flesh sorts—in the habitual dietaries of the natives. The multiple neuritis is in all probability (as believed by some distinguished investigators in the East Indies and Brazil) the result of the presence of a specific micro-organism, only to be found in low lying, moist countries, among races long deprived of albuminous food. Navassa is notoriously an unwholesome guano and phosphate island in the Caribbean Sea, occupied mainly by contract laborers, often convicts, living under great hardship for long periods. In the past few years the isolated rock has been unpleasantly heard from, with trials for murder under the jurisdiction of the criminal courts of Baltimore. Under the circumstances the occurrence of beriberi can cause no surprise, and scurvy cannot be unknown there.

At the last International Medical Congress at Rome, a paper on beriberi was read by a Japanese naval medical officer—a delegate from the marine department of his government—giving statistics and results of the present management of the disease in their navy. With a rearrangement of the dietary, the introduction of a large increase of nitrogenous food elements, and a corresponding diminution of the carbohydrates, the disease has been gradually eliminated, and for 1893 few, if any, cases are reported. It was formerly very prevalent.

Following a common rule, beriberi requires for its evolution a soil and a specific micro-organism, in this instance the lesion being fundamentally in the white nervetissue of the peripheral nervous system. Want and misery, with deprivation of proper food—albumins of animal origin mainly—will soon produce the disease in countries of its endemic prevalence.

As an example of how beans will vary (coming back to our subject) in relative composition, I append some trustworthy analyses, made by Professor Atwater, of Wesleyan University, at the Agricultural Experiment Station, Storrs, Conn. If such differences occur under equal conditions, what may be looked for with widely varying quality of seeds, soil, and climate, in the relative amounts of legumin, sulphur, phosphorus, and albuminous nitrogen substances upon which the peculiarly nutritive value of some kinds of beans depends? Changes due to parasites, fungi, bad keep, age, etc., are not considered, yet have a share in rendering unfit for consumption foodstuffs, especially the leguminosæ so much given to ships.

	Six Weeks Beans. Per cent.	Soja Beans. Per cent.	Common, as Purchased Per cent.
Water	11.46	8.32	13.70
Protein	19.92	35.24	2.32
Fat	1.81	20 48	2.01
Nitrogenous free extract	60.26	25.86	60.26
Fibre	3.25	4.84	....
Ash	3.30	5.26	3.60
Albuminoid nitrogen	2.78	5.40	....
Non-albuminoid nitrogen	0.41	0.24	....

Very respectfully yours,

C. A. Siegfried, M.D.,
U. S. Navy.

U. S. Steamship Cincinnati, November 26, 1894.

PERMANGANATE OF POTASSIUM IN OPIUM POISONING.

To the Editor of the Medical Record.

Sir: Having been unprofessionally criticised in your journal on October 6th, by Dr. Warfield, in regard to my article on the same subject as this brief reply, and being again made the subject of ridicule from the pen of the original discoverer of permanganate of potassium as an antidote to morphine poisoning, Dr. Moor, please allow me to reply. I would suggest to the two doctors that they read the articles of Dr. Glenn Anderson, of Montgomery, Dr. Joseph M. Rector, and Dr. Harding. Dr. Warfield says that Dr. Moor pointed out plainly to his medical brethren that the administration of potassium permanganate would chemically render inert the amount of morphine remaining in the stomach at the time of administration. If Dr. Warfield has the correct version of the discoverer's ideas of this new antidote, it will only save the use of the stomach-pump in morphine poisoning —nothing more. I will ask Dr. Warfield to read Dr. Moor's original article, and then his reply to my article, and I think he will be led to believe that Dr. Moor even claims the permanganate to be more than a chemical oxidizer in morphine poisoning. In his original article Dr. Moor says that he considers the permanganate to be the antidote, *par excellence*, for morphine poisoning, and further: "I have strong reason to believe that the administration of permanganate will be of service even after absorption has taken place." After my patient was in a fair way to recovery, Dr. Earnest suggested the permanganate upon physiological grounds of its alleged effects. I did not want to use it, as I had no faith in it, but knowing the patient to be in a fair condition, I yielded reluctantly to the administration of the drug. I do not claim that the permanganate did my patient any harm — it merely deprived him for the time being of remedies that would have been of positive benefit. I do not consider permanganate of potassium to be a drug of any value in opium poisoning.

C. Monroe McGuire, M.D.

Walsenburg, Col.

Alcohol and the Bible.—Dr. Harnack, of Halle, has published a brochure to show that the teachings of the Bible are against the doctrines of the prohibitionists. He cites a number of passages from both the Old and the New Testaments in which wine is mentioned as a permissible, if not necessary, article of diet. To "look not upon the wine when it is red in the cup," he opposes "take a little wine for thy stomach's sake."

Dr. M. Rossbach died a short time ago in Munich, at the age of fifty-two years. He was author of the well-known "Lehrbuch der physikalischen Heilmethoden," and joint author with Nothnagel of a treatise on therapeutics.

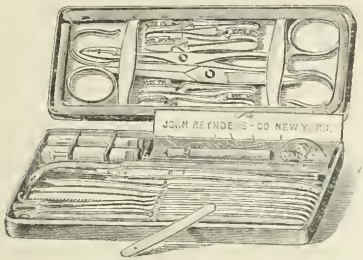
New Instruments.

AN ASEPTIC AND REALLY SURGICAL POCKET-CASE.

By ROBERT H. M. DAWBARN, M.D.,

PROFESSOR OF OPERATIVE SURGERY, NEW YORK POLYCLINIC.

In the *New York Medical Journal* of October 19, 1889, I described, and showed by illustration, a pocket-case for minor surgery, which at that time seemed to me worthy of mention. To-day the accompanying woodcut gives some idea of an improvement upon that case, based



upon further experiment in the matter of compactness and also of lightness. It seems to the writer that this case, as now completed, combines a number of desiderata:

1. It is so shaped as to be able to fit into an upper vest-pocket, and not to spoil the fit of a coat, being quite thin.

2. The instruments are very compactly arranged, there being no waste space. Indeed, the only criticism on the case which occurs to the writer is that a little practice is needed in order to replace instruments speedily after use.

3. The case itself is of aluminum, nickel-plated, as also are the handles of the instruments. Consequently a great gain is made in lightness. Indeed, this case, with about double the number of instruments contained in any other pocket-case, nevertheless is not at all heavy.

It was necessary to nickel the aluminum because of the next point, namely,

4. If either case or instruments become soiled, they may be sterilized in the usual way, by boiling, and to avoid rust we always add an alkali, *e.g.*, some washing-soda. Now, it is known that alkali attacks aluminum, hence the necessity for plating the case and the instrument handles.

Contrast this ease of sterilizing with the condition found in the ordinary leather, velvet lined pocket-case, which is still the favorite with instrument dealers. In course of time the latter becomes grimy with dust, and malodorous from perspiration, and is impossible of cleansing in a surgical sense.

5. The selection of instruments is based upon common-sense and the needs of practical surgery, and no one can claim as much for the ordinary pocket-case. This latter, for instance, rejoices in a single pair of artery-forceps. Indeed, I have seen no other pocket-case with more than one, or at least two, pairs of hæmostatic forceps, whereas every surgeon knows that if one pair be needed, half a dozen are likely to be. This new case contains six, and the needle-holder may, if required, make a seventh.

Again, almost all cases which I have examined still display that abomination, a jointed metallic catheter. This instrument of torture never fits properly when it has been screwed together a few times, and thereafter scrapes the urethra viciously.

The knives are a weak point in most cases and show amateur selection. For instance, there is always the curved, sharp pointed bistoury—a thing which surgeons do not use, because they never stab and cut out. It is not even necessary to do so in opening a boil, in these days of cocaine anæsthesia.

The knives are too numerous, as a rule, and the scalpels have little, baby-blades. By shortening their handles it is easy to make room for blades of adult size, with which a thigh could be amputated if need be.

We may fairly criticise, too, the needles and needle-holder ordinarily found; both being still of the old-fashioned type; whereas surgeons use almost exclusively the Hagedorn needles, and these cannot properly be grasped by the ordinary holder. The advantage of the Hagedorn needles is, that they cut in such a way as to aid hæmostasis when the suture is tied; and also to diminish the size of the scar left by the needle. The cut runs like the buttonholes along the edge of a coat; *i.e.*, at right angles with the wound edge. And this is just the reverse of the direction of the wound made by the old-fashioned needle.

I beg to apologize to all surgeons for these trite remarks upon needles; but inquiry of dealers shows that the great bulk of the profession still buy and use the kind which should be obsolete; apparently not yet knowing these points.

For a good many years, now, the writer has preferred to all others the "patent-eye" or "self-threading" modification of Hagedorn. The Germans used them for a long time before they were much noticed here. They call them "Nähnadeln mit federndem Ohr." If properly made, the needle does not cut the thread at the eye, and it can be threaded in a moment, with bloody or otherwise sticky fingers, and in the dimmest light.

To continue this little critique: We commonly find in pocket-cases some more or less sterile silk, by way of suture and ligature material, lying in one of the dusty pockets aforesaid. Of course suppuration follows its use; otherwise it would disappoint us.

In the aluminum case, instead, will be found two little bottles with rubber corks. Each contains a small glass reel, and one is full of sterile silk, the other of sterile catgut, medium sizes, each in absolute alcohol. Enough surgically pure material is here to supply ligatures and sutures for even a large operation.

The same little aluminum compartment which contains our needles, finds room for a silver *porte caustique;* and also for a few bichloride of mercury tablets, wrapped in rubber tissue; enough for some quarts of antiseptic solution.

In conclusion, the list of contents is appended in full. As to the catheter mentioned, it is a soft rubber Nélaton catheter, of medium size; and besides its obvious function, it acts as an elastic buffer, preventing any rattling of instruments within the case. It may also serve to constrict some small member, as a finger, during operation. It will supply, if sterile, drainage-tubing in emergency. A two-inch section, with the aid of a large safety-pin, makes a very fair tracheotomy tube for infants. It enables one, with ease, to pass twine tied to it, through the nose into the pharynx, and so out of the mouth, thereby permitting instant control of nose-bleed by tamponing both anterior and posterior nares.

Contents of Aluminum Case.

1 Scalpel, full-sized blade.
1 Long, narrow, straight, sharp-pointed bistoury (this may be used as a tenotome).
1 Metacarpal saw.
1 Peaslee needle, curved (eye in point with handle; for passing retention sutures).
1 Grooved director and aneurism-needle combined.
1 Pair dissecting forceps.
1 Pair mouse tooth forceps.
1 Volkmann sharp spoon (an instrument often needed).
1 Pair scissors, with French lock, for ease of cleansing.
1 Needle holder, with French lock; which is also a dressing-forceps and an artery forceps.
1 Silver *porte caustique*.
1 Nélaton catheter.
1 Small package Hg. bichloride tablets, in rubber tissue.
2 Silver probes, one-eyed.

2 Bottles, one containing silk, one catgut, in absolute alcohol.
6 Hæmostatic clamps.
Assorted sizes of Hagedorn's "self-threading" needles.

The pocket-case thus described is made by Messrs. Reynders & Co., of this city; and is sold at about the cost of other pocket-cases.

Medical Items.

Contagious Diseases — Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 1, 1894.

	Cases.	Deaths.
Tuberculosis	100	110
Typhoid fever	26	9
Scarlet fever	90	8
Cerebro-spinal meningitis	2	2
Measles	47	2
Diphtheria	202	59
Small-pox	13	1

The Physical Strain Involved in High Speeds.—The exaction that modern railroad speed makes on the physical stamina of railroad men is demonstrated in the fact that seven engineers are required to take the Chicago flyer out and seven back, says the Boston *Transcript*. The running time between New York and Chicago is twenty-four hours, and the average speed is forty-eight miles an hour. Each engineer and engine runs three hours. Machine and man return with a slow train to their starting-point to relieve the strain on both. Then the engineer is given forty hours' rest before he goes on the flyer again. This rest is absolute, no work of any kind being required of the engineer. Though the average speed is forty eight miles an hour, the locomotive must at some points be driven at sixty or more. The physical strain on the men in the cab at those bursts of speed is something terrible. The engineer has fifty things to look out for, and is being shaken and swayed all the time. The fireman is constantly feeding the insatiate furnace. On the run of the Empire State express three tons of coal are shovelled from the tender into the furnace between New York and Albany. It is not wonderful that the engineers of this train are given alternate days for rest and recuperation. Fast travel not only wears out rails and machines, but human creatures' lives. —*Scientific American.*

Origin of the Term Anæsthetic.—Mr. Edgar Willett, in a communication to the *British Medical Journal*, records a conversation he had with Oliver Wendell Holmes when the latter was in England in 1886. The discussion had turned on the subject of anæsthetics, when he said: "Do you know the origin of the term?" On receiving a negative answer he replied, "Then I will tell you. I believe it was I who invented it, and this is how it occurred. Many years ago, when ether and chloroform were only just coming into use, Morton, the dentist at Boston, who was largely responsible for the introduction of ether, came to me and asked me if I could suggest for him a word which could be used for both drugs, and also a word which would describe the effect produced by their inhalation. After trying two or three words, æsthetic occurred to me as meaning sensitive, and in consequence anæsthetic as being insensitive easily followed, with anæsthesia for the condition produced. That," he concluded, "was, I believe, the origin of the term."

The Middle Tennessee Medical Association, a recently organized society, held its first meeting in Nashville on November 20 and 21, 1894. A number of interesting papers were read and discussed, and the meeting was regarded as a success.

Contagiousness of Phthisis.—It has been decided in Toronto that phthisis is a contagious disease, and accordingly the board of education has decided to forbid children suffering from it to attend the public schools.

Count Leo Tolstoi is, as might have been expected from a consideration of his other eccentricities, a pronounced anti-vaccinationist. He holds that "the obligation of parents to let their children be subjected to operations deemed necessary by doctors seems to me as great an outrage as the obligation of parents to subject their children to school teaching imposed upon them by the government."

Individual Communion Cups. — The Homœopathic Medical Society of the County of Philadelphia, at a recent monthly meeting recommended the abolition, by all churches, of the common communion cup, or chalice, and the substitution of individual cups.

Against Christian Science.—The Humane Association, at the closing session of its annual meeting, held in Evansville, Ind., on October 11th, adopted a resolution condemning, in strong terms, the practice of Christian Scientists, and urging all societies to investigate any suspicious deaths, and prosecute, if they are found to result from the ministrations of this doctrine.

Trusses.—Dr. A. Landerer, of Stuttgart, recommends the use of rubber pads filled with glycerine for trusses. He finds them durable as well as comfortable, and says that they never cause atrophy of the tissues against which they press.

The Czar's Death has been attributed by some imaginative newspaper correspondents to the effect of poison secretly administered by Nihilist members of his household. This report is characterized by Dr. Leyden as pure fiction. The post-mortem examination, as detailed elsewhere, established the correctness of the diagnosis of chronic nephritis, with commencing atrophy of the kidney, secondary enlargement of the heart, and inflammation of the left lung. The stomach was intact.

BOOKS RECEIVED.

A Text-Book of Volumetric Analysis. By Henry W. Schimps. 8vo, 400 pages. Price, $2.50. Publishers, John Wiley & Sons, East Tenth Street, New York.

A Compend of the Practice of Medicine. By Daniel E. Hughes, M.D. 5th Physicians' Edition. 8vo, 568 pages. Price, $2.50. Publishers, P. Blakiston, Son & Co., Philadelphia, Pa.

Fibroid Diseases of the Lung. By Sir Andrew Clark, M.D., W. J. Hadley, M.D., and Arnold Chapin, M.D. 8vo, 200 pages. Illustrated. Price, 21*s* net, cash. Published by Charles Griffin & Co., Ltd., London.

Atlas und Grundriss der Traumatischen Fracturen und Luxationen. Von Professor Dr. H. in Greifswald. Mit 166 Abbildungen Nach originalzeich nungen von Dr. Joseph Trumpp. Verlag von J. F. Lehmann, Munich.

The Physician's Complete Account Book. Published by Peckham, Little & Co., 56 Reade Street, New York City.

A Manual of Modern Surgery, General and Operative. By John Chambers Da Costa, M.D. 8vo, 809 pages, illustrated. Price, $2.50. Published by W. B. Saunders, Philadelphia, Pa.

Essentials of Diseases of the Skin. By Henry W. Stelwagon, M.D., Ph.D. 12mo, 270 pages, illustrated. Price, $1.00. Published by W. B. Saunders, Philadelphia, Pa.

First Aid to the Injured. By E. J. Lawless, M.D., D.P.H. 8vo, 262 pages, illustrated. Price, $1.25. Published by J. B. Lippincott Company, Philadelphia, Pa.

Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D. 8vo, 501 pages, illustrated. Price, $2.50. Published by W. B. Saunders, Philadelphia, Pa.

Heart Studies, Chiefly Clinical. By William Ewart, M.D. 8vo, 486 pages, illustrated. Price, 15*s*. Publishers, Baillière, Tyndall & Cox, London, England.

A Dictionary of Medicine. By D. Richard Quain. 2 vols., 1261 pages and 1305 pages, illustrated. Royal octavo. Published by D. Appleton & Co., New York.

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ON THE NEW USE OF SOME OLDER SCIENCES.

BEING A DISCOURSE ON DEGENERATION AND ITS STIGMATA.[1]

BY CHARLES L. DANA, A.M., M.D.,

NEW YORK.

GENTLEMEN AND LADIES: As I survey the medical activities of the present time they seem to be working in three distinct streams of fruitful and progressive effort. The first, and just now greatest, takes in all that may be meant by bacteriology or the science of minute organisms. Through this we are learning the secrets of disease and health; through it we shall some day, I hope, reach a germ-free millennium, or at least learn to live unscathed among our little enemies teeming in the air and dust.

Next, one finds that while medical men are abandoning faith in old-time Homeric drugs and drugging, they are working with an intenser energy than ever to perfect the technical details of their art. In every branch exactness of observation, precision in examination, and resourcefulness and ingenuity of treatment are increasing, until the reproach that medicine is not a science is slowly losing its force.

Finally, I see a new and extraordinary energy put forth in the study of the physical characters of man, and the significance of the lines along which each individual is built. We are trying to read in man's general conformation the story of his character, his weakness, his capacity, his power of resistance to disease and temptation—in fine, his moral and intellectual endowments. It is because this movement, though it has reached great proportions in Europe, has made little impression here that I propose to make one phase of it the subject of my remarks to-night.

It is a doctrine as old as Hippocrates that different people have a special tendency to different diseases, and that they react in different ways to the influences about them; that one will have catarrhs, another gout, another rheumatism, and another consumption; that one is lethargic, another nervous, and another melancholic. It is not of these kinds of investigation that I shall speak; though this new science does in a certain measure what the quasi-sciences of physiognomy and of phrenology, of diathesis and temperament, once claimed to do. It does not seek to accomplish its object, however, by feeling the bumps on the head, or noting the lines on the palm, or studying the hand-writing, or by mystic rites performed over a lock of hair. It is a science quite different from so-called phrenology, or physiognomy, or chiromancy—arts which are merely incongruous collections of fatuous guesswork. This coming science has no name that yet specifically indicates its work. It is approached on the one hand by anthropologists, and on the other by students of nervous diseases, of insanity, and of crime, and it receives accessions from the learned savants of the universities and the modest instructors in the gymnasia.

It is a study of the human body in its largest significance, a measurement of the capacity and fruitfulness of the soil. By and by all the harmful microbes of the earth will be subdued, and we will hear no more of them except as curiosities in germs; but the human soil, on which they used to grow, will remain, with all its ever-increasing complexity, and physicians will then have only the functions of interpreting its values and patching up its injuries or inherited defects.

A sort of dim foreshadowing of this science is found in the history of physiognomy and its allied arts. I use the word and touch upon the subject with some hesitation. Five hundred years ago Petrus de Abano, of Italy, discoursed upon it and was subsequently burned for heresy, *secundum artem*, in the flames at Padua. Not longer ago than the times of George II. all persons "fayning to have knowledge of Phissiognomie or like Fantastical Ymaginacions" were deemed rogues and vagabonds, and liable to be publicly whipped or sent to the house of correction. The attempt to measure a man by his looks, however, has always been made, and its professional votaries have crystallized their knowledge into many a scientific treatise of admirable length and erudition. In those days there were onychiologists, who read character from the nails; podoscopists, who studied the signs in the feet; metaposcopists, who read the face, and many other subdivisions of the general art of fooling people by examining certain fractions of their body. The ancients, however, did not build their science up securely; they could not resist the desire to mingle prophecy with their imperfect divination, and as time passed and knowledge grew, both prophecy and the various arts of physiognomy declined.

A little over a hundred years ago a devout clergyman of Switzerland, Louis Lavater, gave the last impulse to this line of work in a most learned, pious, and industriously written treatise on physiognomy, which he dedicated to the promotion of religion and right thinking. Lavater called attention to the striking way in which physiognomy sometimes indicates the character and intelligence of the individual. Perhaps he overdid the thing a little. His pictures of bad men were so frightful that the reader's vanity was almost compelled to feel that he must be good, while his virtuous faces were so insipid as to excite self respecting men to a distinct desire for vice.

The soul and intelligence, said Lavater, show themselves in the head and brow, and their centre is the eye; the moral life is indicated in the face, and its expression centred in the nose and cheeks; the animal and physical life are centred in the stomach. They showed their predominance also in the mouth and chin.

One day Lavater made the mistake of thinking that an executed assassin was an eminent philosopher and preacher, Herder. Worse mistakes have been made, but still such things impaired the dignity and security of his already decadent system. Lavater's teachings were too simple in theory for a science and too complicated in practice for an art. His illustrations remain, and his head of Satan in particular represents a character which no one can see without desiring to resemble it. His physiognomy died in the arms of a more successful form of philosophy.

It was only a few years later that an Austrian physician, Dr. Gall, began his lectures on what is still known as phrenology. The story of how he noticed the bulging eyes of his school fellows who surpassed him in their memory, and of how he found big bumps over the ears of murderers and over the temples of thieves is probably familiar to many. It was at least part of the learning of my school-days. Dr. Gall was an industrious enthusiast,

[1] Delivered at the Anniversary Meeting of the New York Academy of Medicine, November 28, 1894.

and there is little in the phrenology of to day which is not due to his labors, though he had able helpers and successors in Spurzheim and Combe. Practical phrenology now is really but a shrewd empiricism based on physiognomy, and not upon the classical bumps at all.

Taking a standard phrenological bust as sold by the professors of the art, I have drawn over the various faculties, as indicated by Gall, lines by which I could map out the functions of the different parts of the brain, so far as they have been absolutely determined by modern investigations. These show some curious juxtapositions. Thus the bumps of murder or destructiveness, and secretiveness which lie just above the ears, correspond with the centre for hearing; the bump of thieving, which is a little in front of the ear, lies over the centre for the movements of the mouth; while self-esteem and reverence correspond with the more measured activities of the legs; I find also that parental love is identical on the bust with the sense of sight, and hope with the motions of the shoulders and arms. Perhaps some philosopher of the future will reconcile these differences and construct upon them an esoteric metaphysics; but at present it seems to me that physiology has quite extinguished the science of bumps. While the actual contributions of Dr. Gall to science were small, his work called attention to the importance of studying the conformation of the head and the function of the brain, and gave an impetus to more serious and fruitful studies.

It is since Dr. Gall's time that the word "degenerate" has become one of common usage in French literature, running through works on heredity, social economy, art, morality, crime, insanity, and disease in all its forms. We find French literature full of articles upon degeneracy and civilization, degeneracy and crime, degeneracy and disease. There is in France a whole school of the Decadents, as they more euphemistically are called. The term has been adopted by the Germans, and runs through the work of Lombroso and his followers in Italy. In England and this country its use and significance seem to me to be much less appreciated. Yet since the first applications of the new science have been toward helping us recognize those who belong to the class known as degenerate and unstable, I shall devote a little time to explaining what is meant by the word.

The term has an unpleasant sound, and nobody likes to hear dry expositions of depressing phenomena. The New Yorker of to day will hardly tolerate a tragedy; he wants his drama farcical, his art sensuous, and his novels with a pleasant hymeneal ending. I cannot believe it possible for me to make a discourse on degeneracy at once lucid and attractive. But if one will pass the tip of the tongue over the roof of the mouth, five or six out of every one hundred adults will feel a curious ridge along the middle of the hard palate. This is called the *torus palatinus*, and whoever has it possesses one very interesting mark of degeneracy. The finding of this will, I am sure, give a certain percentage of people a personal interest in the subject, and will make them listen with some quietude in order to learn if it has any painful significance.

I do not need at this day to refute that shibboleth of the Reign of Terror that all men are born equal. We all know very well that babies start in life with very unlike endowments. For the purposes of my explanations, however, I shall only say that some are born like and some are born unlike their parents. Those who have more or less fully the mental and physical characters of their family are considered technically normal, while those unlike it are degenerate. The degenerate are those who differ from the average standard as set up by the family from which they spring; they are variations from the healthfulness of mediocrity; they are the peculiar people. Here, for example, is an illustration familiar to all. An honest, healthy, and respectable couple have a number of children; most of them take after their parents more or less closely and grow up honest, healthy, sturdy, perhaps mediocre or somewhat more than mediocre men and women. But one of the children is different: he is wilful, perverse, impulsive, deceitful; perhaps, however, talented in music or art, in business or literature. He is looked up to as the genius or the doubtful character of the family, and all the friends wonder where he got his endowments. He is one of the degenerate. If his talent overrides his moral imperfections he makes, perhaps, a success of life, and he is called technically simply an unstable, or popularly an erratic man. If his talents and bad tendencies are pretty evenly balanced he is called a degenerate of the superior type, while if he discloses decided mental weakness or develops an epilepsy, or hysteria, or some curious form of hypochrondriasis, he is called an inferior degenerate.

From this last class are fed also the insane and many criminals. The weak-minded, imbecile, and the idiot stand at the lowest level of the degenerate class. The common characteristic of all is that they are variations from the family average, they have mental faculties and physical powers not evenly balanced, and if they marry they may accentuate the degeneracy, while eventually their family becomes sterile and runs out. This tendency to sterility is the final and uniform criterion. The histories of prominent families of Europe, aristocratic and royal, are often cited as illustrations of this phenomenon. But it is not confined to them, and we see it in the country as often as in the cities.

There is, however, a brighter side to this picture. The human race possesses a conservative force which constantly tends to bring individuals back to the average and healthy type. Giants do not breed giants, or dwarfs dwarfs; neither do idiots breed idiots, despite the reiterations of controversial journalism, nor do criminals breed criminals. These classes have no children, or their children are better than the parents. Men and women of genius, and even those of extraordinary talent, follow the same rule. Their children tend to drop to the level. There is a centripetal force that brings the generations back to the type of the average man. No amount of acquired aptitude or special skill is transmitted to the children, though some of that with which one is naturally endowed may be passed on. The degenerate class in all its grades is a very large one, embracing five to ten per cent. of adults; few successful men can be said to be free from the taint. And since perfect stability of the organism is only found in the average, or some would say commonplace man, it may be said that degeneracy is a condition not altogether undesirable. Such a view is quite justifiable. I am flying in the face of the old adage, that the best possession in life is *mens sana in corpore sano;* but I do not think that perfect health and perfect sanity are things that any individual should desire. It is good for society as a whole, but not so for the individual, or, I might parenthetically and professionally add, for the doctor.

I have often noticed that families with a streak of insanity, or inebriety, in their membership number the brilliant and successful men. Only the insanity, like the boil, should affect the other man. No man of genius had ever perfect physical proportions or perfectly stable organizations. On the other hand, the portraits of beautiful women are not the portraits of women who have had great intellectual attainments, and the beauty of women has only affected the world's history indirectly through lower channels. Perfect beauty means mediocrity, and man's desire for the one is the force which brings back the degenerate to the other.[1] There is a scientific justification for the fun which one of our daily papers so often pokes at pulchritude. I do not mean that one must be ugly in order to be brilliant, but only that in women and men of talent or wickedness there is

[1] The well-known artist, Mr. A. B. Frost, is quoted by Robert Bridges (The Bookbuyer,) as saying, referring to artists' models: "I might mention that there is a singular peculiarity about the women. All the handsome ones are stupid and can't put an idea into a pose, and all the bright ones who can and will pose and help you work are decidedly plain both as to face and figure."

some deviation from the standard type which the modern sanitarian would call the normal.

But here I must make some important modifications in my text. I have spoken as though there were but two classes of people; 1, the normal, which includes the great majority; 2, the degenerate. All writers have so far chosen to make only these distinctions and have established the signs by which to divide all humanity into the sheep and the goats.

But in this, as it seems to me, one important element is left out, or not sufficiently considered. While most people may be what the modern æsthete or green carnation critics call "middle-class," the remnant are not all below the average, as their name "degenerate" would imply. Assuming at least that the human race is slowly progressing, it must be that the average man and woman is also becoming of a slightly higher type; and this in turn must be because many of the variations from the healthy average are distinctly above it. Some of the people who have the peculiarities of instability and tendency to die out, do nevertheless give birth to a more vigorous stock than they themselves possess. In other words, unless the world is growing worse there must be a class of greater than average vigor, who may be called the progressives or "regenerates." There are, however, as yet no anatomical marks known which distinguish these as a type.

I hope I have made measurably clear the idea of degeneracy as it has been developed and taught by latter-day writers. It forms a class of which the members are as far apart morally and intellectually as the possibilities of human nature allow. Yet it has common characters in the reproductive weakness, in the defects of physique, and in the instability of their mental faculties. They are all wanderers from the normal lines. Furthermore, and this is the point to which I have all along been, very slowly I fear, tending, they have about them certain marks or *stigmata* which indicate their divergence, and are badges of their servitude or of their freedom. The study of these marks forms the application of modernized physiognomy and anthropometry to the determination of the degenerate classes. This is the new use of the older sciences.

In France, Moreau, Magnan, Féré, and others have followed up the work of Morel, who may be called the father of the study of degeneracy. But undoubtedly the greatest impulse has been given to these studies by Professor Lombroso and his pupils. This eminent scientist believes that criminals are unlike their own race, but resemble each other and are a family among themselves, with a family likeness and common bodily peculiarities. This conclusion is one to which I cannot at all agree, and which I feel sure is not yet subscribed to by men of science. The exact position in which Lombroso's work stands, I shall refer to later. Meanwhile one cannot overestimate the value of the impulse which he has given to investigations of the human body. If there is ever to be a complete and exact science by which we can in a measure infer character from figure it will be very largely due to the work of the great Italian criminologist.

I propose now, however, to go into some of the details of the curious discoveries that have been made by investigators, not in Italy alone, but in all parts of the world. I do it with the hope that my descriptions will not lead to any unpleasant habits of self examination or to surprises that act disagreeably upon one's vanity. I shall take up the points somewhat at random, for I have not time to present the subject in any systematic and complete manner.

Of all the various systems of which the body is composed, the bones have been thought to be allied most completely with the development of the nervous system. Sir William Gull once suggested that the Socratic advice *γνωθὶ σεουτον* should be interpreted in these days "examine your urine;" but the modern physiognomist would rather say, "examine your bones."

A perfect bony system is a rather good index of vitality at least, and its variations and anomalies make up a large part of the stigmata of degeneracy. The presence of excessively long arms, for example, is a phenomenon greedily seized upon by the Italian school as indicating a return to man's ape-like state, before he fell from grace and his arborial gambols in primeval forests.[1] But long legs and a small chest are also found to be evidence of degeneracy; and whatever may be said of the marks written on the bones, none of them prove that their anomalies are signs of a return to savagery. Degeneracy is not a form of atavism.

Naturally the conformation of the head and face has been studied with much earnestness and much practical success. The skull of man is never quite symmetrical, but it tends to become so; on the other hand, the brain tends to become asymmetrical, *i.e.*, the left side to be a little larger than the right. When things go a little wrong in the human make-up, the skull shows it quickly by getting out of shape. The size does not count very much, for we know that men of genius, like Gambetta, have had skulls that would barely be large enough for a boy. But odd shapes do signify. In olden times the physiognomists thought that men of evil character had a sugar-loaf (oxycephalic) skull, while Gall found his murderer's bump over the ears. And modern criminologists lay much stress on the size of the jaws.

There are, at least, thirty ways in which the head varies from the normal type. Many of these are most trivial, and it is only on the principle that a dozen small things make an object of respectable size that one is justified in giving attention to the facts that are collected. Ordinarily we look in a man's face to see whether it is in general attractive, intelligent, interesting, beautiful, or the reverse. But the anthropologist looks more closely and hunts for his stigmata. One-third of all thoroughly bad men, for example, according to Dr. Penta, have a plagiocephalic or twisted-shaped skull.[2] A still larger proportion,[3] forty-five per cent., have projecting jaws, or prognathism, wide jaws (twenty-nine per cent.), and wide orbits (thirty per cent.)

The nose in the criminal is often rectangular, short, large, and upturned; the face shows early wrinkles and a peculiar pallor. The criminal jaw weighs 94 gm. (3 ounces), the normal jaw but 80 gm. (2½ ounces) (Manouvries). The cheek-bones are prominent, the orbits are large, the frontal sinuses and brows protrude, and the teeth are defective and badly placed. The shape of the palate stands in close relation to that of the skull, and the neat and workman like way in which nature joins the parts in the middle shows that she has done well elsewhere. When the palate has a ridge along its centre, *torus palatinus*,[4] or is high and narrow, or uneven and badly shaped, we count it among the signs of degeneracy, though it weighs lightly in the scale. Criminals have three or more of these various anomalies.

The size of the head, as already stated, counts perhaps less than anything else, unless the deformity be greatly exaggerated. The good and the bad, the sane and the insane, have heads of about the same size, and even prehistoric skulls do not show much inferiority. Civilization began and completed its work with almost precisely the same amount of brain tissue.

The anomalies above described have a rather forbidding and perhaps alarming sound, and it is pleasant to know that individually they are not very significant. A homely face can be quite free from the stigmata of sin, while one of a fascinating and even beautiful type may have much that suggests degeneracy.

[1] When the arms hang straight down by the side, the tip of the middle finger is 14 ctm., or about six inches from the knee-cap. In negroes it is only five to eight ctm., or two to three inches (Krause).

[2] Arch. de Psych., vol. xv., p. 327.

[3] Ibid.

[4] Among 71 patients in the general wards at Bellevue Hospital I found a distinct *torus* in 4, and in 2 of these cases the patients had nervous disease. In 57 patients examined in the alcoholic pavilion, I found the *torus* in 11 cases, or twenty per cent. The *torus* is more marked in inebriates than in the insane, though palates otherwise deformed are more frequent in the latter class.

There are, as artists and anatomists know, certain definite proportions between the circumferences of the neck, shoulders, chest, waist, and hips. These proportions differ for infants, men, and for women.[1] Among the unstable there are often found misfits in these proportions, so that a man, for example, has approximately a child's or woman's proportions. This condition is known as feminism or infantilism, and many striking illustrations of it have been shown by Dr. Charles Féré, of Paris. I have, I am sure, seen it in some classical statues, and I believe it will be found that the Greeks had a certain unholy admiration for some of these beautiful but perverted types of the human figure.

We every-day people have rather agreed to ignore the ears, yet it is remarkable to what uses they lend themselves at the hand of science. Laycock thought that the circulation in the ear was an accurate indication of that in the brain, and that its development coincided with that of the brain and skull. The ear to him was, to the brain, as accurate an indicator as the tongue is to the stomach. Mr. Ellis speaks of an observant schoolmistress who could tell when her pupils were tired by the state of the circulation in their ears. Professor Grandino, of Turin, however, may be said to have done the ear the most illustrious service. He has examined these organs in twenty-five thousand healthy men and women, besides eight hundred insane and four hundred and sixty-seven criminals. I have before me the typical ear as it should be, or at least as the Professor depicts it from the results of his laborious studies. I must confess that after having mastered its admirable symmetries I have gained a new experience in æsthetics. For now it gives me a distinct delight when I come across a perfect aural organ, such as one experiences in seeing a beautiful picture or listening to the harmonies of an up-to-date sonata.

It is surprising how many shapes the ear may take when one comes to look at it seriously in the light of a newly growing science which is thirsty for morphological data. There are at least seven distinct ways in which the ear can be wrong; each corresponding perhaps to a deadly sin, for each is more prominent in the sinner than in the saint. I am not going to enumerate these points, for I cannot do it except in the most technical language, and besides, I do not like to give people who are kind enough to listen to my discourse any opportunity to form a poor opinion of themselves. The long lobes and a peculiar wrinkle in the cavity of the ear are the things which have most significance.

One of the most curious things discovered by the patience of the neurologist has been the prehensile foot (*pied prêhensile*). Drs. Ottolenghi and Carrara examined the toes of one hundred and sixty-two normal people, thirty-one epileptics, fifty-six idiots, and three hundred and fourteen criminals.[2] Among normal people the distance between the first and second toe at the base rarely exceeds 3 mm. ($\frac{1}{8}$ inch) in men, while in the abnormal classes such excess is three times as frequent. The idiot classes seem to be especially marked with this stigma, so that it would be inferred that the activity of the intelligence is indicated in a measure by the distance between the toes. This would seem absurd, were it not that the peculiarity suggests a return to the prehensile toe of the ape, and is therefore classed as a mark of atavism.

I said some time ago that chiromancy had not been taken up seriously by scientists. The lines and furrows which have been studied as a parlor game, and about which prophetic and pseudo scientific works have been written, is mainly but guesswork. Yet the lines so delicately arranged on the finger-tips are beginning to assume some significance. Mr. Galton, in his work on finger-marks, established the fact that they never change in the same individual, and that they may be to a certain extent classified. His investigations were confined to normal people. Alix did the same for the finger-tips of apes, and now Forgeot, of Lyons, says that in young thieves of Boulogne are traces of the same arrangements seen in apes, and Féré finds them among sixteen per cent. of epileptics.[1]

Much has been written about the hand; artists have depicted its perfections, physiognomists have interpreted its shape and expression, cheirologists and the gypsy queens have tried to prophecy from its markings. But a study of its peculiarities by the inductive method takes one into entirely new fields, and shows that to interpret the significance of the hand one must start on quite new lines. There is something perhaps in the fact that the artistic hand has somewhat tapering fingers, but beyond this one deals with uncertainties. And I recollect an idiot youth whose extremities had the contour of a genius or a Trilby.

If one examines the hands of a large number of persons with a nervous endowment, he will find curious defects in the length and relative proportions of the fingers. The length of the finger is determined by that of the middle one. If the index and medius are closed upon the palm, the ring and little finger being left extended, the middle finger will reach close to the place where the so-called life-line runs down, between the ball of the thumb and that of the little finger. It will touch the palm just below the highest part of the ball of the thumb.[2] The middle finger is taken as the standard of length by which to gauge that of the others. In a normal hand the forefinger reaches just to the root of the nail of the middle finger, the ring finger is longer and should reach nearly to the middle of the nail of the medius, while the little finger should reach to the last joint of the third finger. Now in inebriates, epileptics, neurotics, and the degenerate generally, these proportions are often not observed. The most common defect is shortness, especially of the third and little fingers, though sometimes a disproportionate length occurs. Sometimes these fingers are unnaturally slender or the little finger is slightly bent. The most common abnormality of the thumb is excessive shortness, with a defective mobility. These peculiarities well accentuated form what we may call the "decadent hand"—the hand that writes our sensuous novels, the Hauptmann drama, paints symbolic pictures, and exploits pure æstheticism. Such hands may be well-formed to the ordinary eye, and may be attached to slender and graceful limbs. But this kind of beautiful hand and arm is found quite as often among the children of alcoholics and among those highly cultivated families which have become degenerated by vices and vicious crossing.

The hair adds a little to our knowledge of the individual, but not very much. Light hair and blue eyes seem to be dangerous endowments in the Italian race, but this is not the case with the Anglo Saxon. It may be a comfort to know that hair grows plentifully on the heads of criminals, and that prematurely bald men are rarely bad, through any hereditary defect at least. The degenerate has often a thick head of hair and a thin beard, while in modern society the normal man seems to be equipped in just the opposite way. That twist of the hair known as the crown of the head, should be in the middle line, or very close to it, and no one is entitled to more than one crown. When it is found shifted off well to one side, or is doubled, the twist becomes a stigma. Art and fashion permit one to tip the hat slightly to the side, but nature orders that we wear our crown in no jaunty or frolicsome mode. It is often thought that an abundance of hair signified a vigorous vitality, but this is not strictly the case. The excessive

[1] The average circumferences in men and women are given by Krause as follows, in centimetres:

	Men.	Women.
Circumference of neck	34	32
" at level of iliac region	70	73
" level of hip bone joints	81	84
" breadth between trochanters	34	35
" shoulder breadth	39.1	35.2
" hip breadth	30.5	31.4

[2] Giorn. della R. Acad. di Med., 1892.

[1] Les Empreintes digitales, Lyon, 1891.

[2] Féré: La Famille neuropathique, p. 281.

development of hair on the body, particularly in women, is regarded as one of the minor stigmata of degeneration.

My remarks would be both incomplete and misunderstood if I left it to be inferred that degeneracy, in its various forms, is determined by bodily marks alone. There are two other classes of stigmata, the physiological and the mental. Under the former, we include peculiar defects in the function and practical working of the body; under the other we include certain mental characteristics. The degenerate are apt to have an unstable circulation and a deficient vitality that responds abnormally to stimulants of various kinds. Mentally a peculiar characteristic is a tendency to morbid fears, introspection, idiosyncracies in taste, and impulsive acts. These and many other of the stigmata occur in the normal, however, and I do not propose to enter a branch of the subject which is much less definitely worked out and less susceptible of demonstration.

I have now described to you the gradual development of a science of human measurement out of the cruder sciences of physiognomy, temperament, and phrenology.

The metaposcopist of the Greek school viewed the body and detected in it signs of some dominant quality. The man was quick and irascible like the dog, or slow and sensuous like the pig, brave and forceful like the lion, everyone resembling in feature or character some lower animal. The mediæval artist added to this the science of divination and prophecy. In the times of Lavater the physiognomist tried to interpret from the attitude, the complexion, and features, the various complex elements of the individual's disposition.

The phrenologist of the Gall school went still further, and described all the intellectual and moral faculties, mapping out for the man the total sum of his capacities, his aptitudes, and his prospects in life.

The modern student of the human frame is much more modest. He asserts only that he can by the presence of certain stigmata say whether the individual is of stable and normal organization, or if he belongs to that class which I have described as the degenerate. Nor does he pretend to do this in all, but only in those whose defects are well-defined and reasonably numerous. Perhaps every one has some stigma of degeneration; but at least five out of a hundred adults have many and striking ones. The degree of their degeneracy may be in a measure decided, but cannot be determined by anatomical marks alone. And it is on this point that I must differ from the Italian criminologists, who claim that there is a criminal, an insane, a neuropathic type.

In conclusion, let me say that the final work of modernized physiognomy will not be to fix upon human beings any stigma which marks them as necessarily useless, defective, or dangerous. We have not discovered a type of criminal man, or of the insane man, or epileptic or neurotic man. All these have common marks which show simply that they belong to the same somewhat handicapped family. Their presence in an individual will show that he must be especially careful in educating and using his natural power. The discovery of degeneracy throws an additional responsibility upon him, for there are few so bad but that with a proper environment they can get along successfully in life.

There may be some born criminals, but they are very few; most are simply persons of degenerate type who fail to husband properly the endowments they possess. We do not excuse the cripple who attempts to become a sprinter, nor should we excuse the morally defective who indulges in debasing habits and low temptations.

All modern studies in the lines I am exploiting seem to show that man must be more than ever careful of his education, his training, and his surroundings, and of using all possible moral and spiritual agencies to strengthen his defects and make more stable his powers. The future of the degenerate depends enormously upon these factors, and his responsibility lies in his following that line of life which is right for him. By this means one can render many defects harmless, and make the unstable almost as firm in judgment and healthful in body as the happy possessors of perfectly balanced organizations.

If I have succeeded in showing that this is to be the end and teaching of modernized physiognomy, and shall have aroused your interest in its progress, my object will be accomplished to-night.

THE PRESENT STATUS OF THE SPECIFIC TREATMENT OF DIPHTHERIA.

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Upon my recent arrival in this country I found the greatest interest manifested, both in professional circles and by the laity, on the subject of diphtheria, and the greatest expectations seemed to prevail on all sides from Behring's diphtheria antitoxin as a practically unfailing remedy for the rapid cure of that disease.

The reliable information which has reached the profession in this country from Germany being comparatively meagre, and coming, as I did, directly from there, and having through previous and more recent labors been intimately connected and interested in the subject, I was naturally interrogated on all sides as to my views, and especially so by Dr. Shrady, the editor of this journal, upon whose request I am pleased to state them herewith for publication.

The use of pathogenic bacteria for the production of curative remedies may be in two directions, and for two purposes, first, by using their own secretion products against them and for their destruction (the possibility of which is apparent in the dying out of artificial cultures long before the nutrient material is exhausted), and secondly, by using these organisms for the production of immunity by their direct introduction into the blood of the animal.

In the first place, we will have to produce the curative remedy from the culture fluids; in the second, from the fluids of animals in whom artificial immunity has been produced. The question arises, "Which is the surest and easiest method?" The degree of immunity differs materially in the various diseases due to specific disease-germs; it is, for instance, very great and long lasting in variola, very small and of short duration in diphtheria, and entirely wanting in pneumonia.

The second method adopted by Behring, to use the serum of animals in which immunity has been produced, can therefore only be followed for the cure of diseases which secure at least a moderate degree of immunity to persons having recovered from them, and if we accept the results of experiments upon guinea-pigs as applying also to man, diphtheria belongs to this class.

In this connection the clinical experience must not be overlooked, that man may acquire diphtheria again, after a short period from the time at which all evidence of the previous disease had entirely disappeared. I have lately been able to report several such cases,[1] while the presence, for some time, of virulent diphtheria bacilli, especially in the nose, after recovery from the disease, and without the production of membranes, or of general symptoms, speaks, nevertheless, for the production of at least temporary immunity in man also. However this may be, Behring certainly is entitled to credit for having shown that a great degree of immunity from diphtheria can be obtained in animals by the injections of increasing large quantities of virulent diphtheria cultures into their blood.

According to the results obtained in Europe, the serum from such animals has certainly a high degree of curative property, since by its subcutaneous injections all fresh and light cases have been uniformly cured, and the best series of reports of all cases (severe and light, in-

[1] Wiener Med. Wochenschrift, Nos. 31–33, 1894.

cluding tracheotomy cases) have reached as high as eighty-eight per cent. of recoveries.

Some observers, as for instance, Hahn, of the Friedrichshain Hospital in Berlin, have expressed themselves more doubtful as to their experience, and it is probable that the variability in degree of individual cases caused the difference in the results obtained. However, upon these less favorable reports the injected quantities were increased to 100 c.c. (a little over three fluid ounces), especially by Ehrlich, and apparently with good results.

To come to an understanding, two questions will have to be answered: 1st. Are there no dangers connected with the use of Behring's serum? 2d. Cannot the same results be obtained in an easier and safer way?

As to the first question, the exponents of the serum treatment accept it as a settled fact that no harm can come from its use; and so far as their experiments upon animals show, they are entitled to this belief. But that it is also true as to man can by no means be accepted as proven, if we will only remember that the very small quantities of organic matter which we inoculate in vaccinating against small-pox have undoubtedly been the means of transmission of human diseases, especially syphilis and tuberculosis. Without, in the remotest sense, affiliating with the opponents to vaccination, who, on account of occasional harm, would throw away the valuable and life-saving discovery of Jenner, I recognize nevertheless the danger which experience shows to exist, and believe that by abandoning human vaccine matter for animal lymph the profession took an important step for the prevention of incidental infection. But even bovine vaccine matter is not absolutely safe, since we have no guarantee of the absolutely perfect health of the animal. For instance, calves are frequently found to suffer from tuberculosis, without recognizable symptoms, and nothing short of the killing of the calves and painstaking autopsies, as I inaugurated in Austria, before the vaccine matter derived from them is used, can be considered as having met all the precautions necessary, and to which persons, especially under compulsory vaccination, would seem to be entitled. If, however, such precautions become a duty in vaccination, where only the minutest quantity of organic matter is inoculated, how much more is it necessary to look to the absolutely perfect health of animals from which we derive serum for the treatment of disease, and of which it is proposed to inject 100 c.c. for the cure of diphtheria?

It is, indeed, well known that in the horse, which is especially made use of for obtaining the serum, there may exist latent diseases of infectious character, for instance a chronic form of glanders may be confined for a long time to the cavities of the head and nose, without occasioning any discharge whatever, and with but little or no glandular swelling, but which, nevertheless, may be a source for fatal infection. Only the most careful post-mortem examinations can guard us against the occasional use of apparently healthy but nevertheless diseased animals, and the killing and examination of these animals is necessary before their serum previously obtained is used for therapeutic purposes. Nothing has as yet been said or published on this aspect of the serum treatment, but it should not be ignored because of the value of the animals and the long time necessary before they have been brought to a state of sufficient immunity; and since it is only a question of money the State should step in and take the matter under its supervision and control.

The exponents and followers of the serum treatment will naturally reply that so far no harm has followed its application. It is, however, not at all shown that this danger has been sufficiently appreciated. Of the severer cases twenty to thirty per cent. have terminated fatally after applying the treatment, and who can maintain that all the fatal cases were really due to the disease?

I willingly admit that the dangers spoken of may be diminished to a small degree by the painstaking selection of animals, but under all circumstances the obtaining of serum for therapeutic purposes will ever be a very costly method.

This leads me to the second question. Can we obtain a bacterial curative substance for diphtheria in an easier manner, which is safer and cheaper while equally effective? I have for a long time followed the thought that pathogenic bacteria, the same as all other living organisms, secrete substances which are poisonous to themselves, of which the retention of excrementitious substances from the kidney and liver of man is a familiar instance. In the case of pathogenic bacteria this is also manifest from the fact that artificial cultures die out long before they have exhausted the nutrient substances in their culture media. This principle governed me in the use of tuberculocidin and antiphthisin for the cure of tuberculosis, and also of antidiphtherine, which latter I have proposed for the cure of diphtheria. That this principle is correct becomes further evident from a number of quantitative experiments made by me with tubercle bacilli.

In the beginning of July of this year I prepared three litre cultures, containing 500 c.c. each, of old and new culture fluids (of sterilized glycerine, pepton, and meat extract), and on July 14th I inoculated each with equal quantities of tubercle bacilli from the same source. The results on August 22d were as follows:

No. 1 contained only old culture fluids; in this culture the tubercle bacilli had grown but little, did not cover the surface, and their weight, after having been dried at 28° to 30° C., was only 0.046 gm.

No. 2 contained 300 c.c. old, and 200 c.c new culture fluid; the tubercle bacilli had grown better, covered the surface more, but only in a very thin layer, without attachment to the side of the flask; their weight, determined in the same manner, was 0.443 gm.

No. 3 contained 200 c.c. old, and 300 c.c. new culture fluid; the culture approached more to a normal one, covered the entire surface, and in a few points attached itself to the side of the flask; the weight of tubercle bacilli, determined in the same manner, was 2.586 gm.

The latter is about half, or slightly over, the weight of the tubercle bacilli from a normal culture of equal size and kind.

These experiments show that considerable quantities of toxines must be formed before the growth of the pathogenic germs is entirely prevented; only upon entirely ripe cultures is their growth impossible. But these experiments show further that the growths in my experiments have by no means reached the weight which would correspond with the new culture fluid which was added to the old.

If we take round figures, 500 c.c. of new culture should furnish in a certain time 5 gm. dried tubercle bacilli; 300 c.c. 3 gm. and 200 cc. 2 gm. The experiment shows, however, that the weight fell short in all. In No. 1, of exclusively old culture fluid, only the one hundredth part was obtained; in No. 2, instead of 3 gm. I obtained only 0.45 gm.; in No. 3, instead of 3 gm. only 2.5, showing that the presence of toxines in the old culture fluids exert a damaging influence upon growing tubercle bacilli.

Quite similar have been experiments with cultures of other pathogenic germs, and we can accept as a law that the diminished growth and the dying out of bacteria depend upon accumulation of their secretions. The latter substances, which belong partly to the albuminoid group, are partially toxic, and I distinguish therefore soz-albumin and toxalbumin, which must be separated from each other.

The soz-albumin from tubercle bacilli cultures is represented in antiphthisin, and of diphtheria bacilli cultures in antidiphtherine. The cost of production of the latter depends entirely upon the facilities for large or smaller quantities, and it will be my endeavor to produce it so cheaply that it will be within the reach of the poorest family in the land, as soon as I shall have demonstrated its clinical value. To this end I expect the arrival of a

large shipment from my laboratory in Strassburg about the first of the year, and it is my purpose to then furnish the remedy free of all cost for the purpose of making comparative trials of its value with that of the serum of Behring. For present comparison I have at my disposal a series of fifty-one cases treated by various physicians in Germany with antidiphtherine. Of these fifty-one cases seven, or 13 7 per cent., died, and forty-four, or 86.27 per cent., recovered. They include both light and severe cases and such where tracheotomy was required.

A similar series of cases under serum treatment, reported by Ehrlich, shows 13 3 per cent. of mortality and 86.7 per cent. of recoveries. The small difference may depend upon the greater number of tracheotomies in my cases. As to the results in the latter alone, I have five deaths in eighteen cases, or a mortality of 27.7 per cent., which is as favorable as under the serum treatment.

I have thus far applied the antidiphtherine only locally, believing that the process is a local one in the beginning; my investigations have shown me that the diphtheria bacillus is chiefly found in the superficial layers of diphtheritic membranes, and, as the latter become older, in the advancing edges of its formation the bacillus may be demonstrated, when none will be found in the central portions. The application of antidiphtherine has been free from all unfavorable effects whatever, and upon its early, thorough, local use depend its prompt and curative effects. Upon a suitable cotton-wrapped probe the remedy is applied upon the diphtheritic patch, the latter having first been cleansed with dry cotton—gently pressing and rubbing the soaked cotton upon the diphtheritic and suspected patches, and leaving it in contact as long as the patient can comfortably hold it. We repeat this two or three times, and then swab the entire pharynx and fauces; great gentleness, and at the same time thoroughness, are essential, especially with very young children. In the latter we may, however, touch the greater part of the fauces and pharynx with the cotton, at one time holding the latter in a forceps with which we may also pass upward behind the velum and naso-pharynx if we suspect trouble there. If none of the patches have been omitted, the temperature falls in the course of three to five hours, and a sense of well-being returns. If the fever does not subside the application must be repeated, and new patches be looked for. In their absence the application must be made in the nose and naso-pharynx also, where patches may be hidden from recognition.

A new rise of temperature indicates a new development either upon the old or a new focus, and the applications must thus be repeated more or less frequently according to the course the cases pursue. Under the most favorable course two or three applications should be made daily until all evidence of disease in the throat has disappeared. The membrane soon loosens and is cast off, leaving a smooth, shining surface, covered with epithelium, a very important result, as thus streptococcus infection is prevented.

The remedy may also be used subcutaneously or per rectum, especially in severe and older cases. Beginning with $\frac{1}{10}$ c.c., and increasing by $\frac{1}{10}$ c.c. every hour, we reach 1 c.c. in nine hours, after which the same quantity is repeated two or three times a day, or still increased, if necessary. Animals bear the subcutaneous use without any unfavorable effect. For the present in the human subject I recommend that the action of the heart be carefully observed during the subcutaneous use of this preparation.

A New Medical Fraud.—An ingenious swindler is going about the city, collecting money from poor people under the pretence that he is an agent of the Board of Health. He gives it out that a new law compels the payment of $2 a year to the Board, of which he is the collector, in return for which the physicians of the Board will attend the family free of charge.

THE "OYSTER EPIDEMIC" OF TYPHOID FEVER AT WESLEYAN UNIVERSITY.

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WHILE it has been for some time suspected that raw oysters may be a possible means of the distribution of germ diseases, there have been no cases where the theory has been positively demonstrated. The recent outbreak of typhoid at Wesleyan University is, in this respect, therefore, so unique as to be of especial interest, and for this reason the results of the investigation as to the cause of this outbreak are given below in some detail.

The history of the epidemic was as follows: About October 20th there began to appear among the students a number of cases of mild fever, which were for several days not regarded as serious. After about a week, however, one or two of them developed into typical typhoid fever, and several others were suspected of being of the same nature. For a week and a half following October 20th, new cases appeared somewhat rapidly, and by November 1st there had appeared among the members of the college about twenty-three cases of fever of more or less prominent typhoid character. After November 1st the number of new cases diminished, although two appeared on November 2d, one on November 5th, and one as late as November 9th. Subsequent to that period no new cases have developed. There have been among the students about twenty six cases of fever which have been, with more or less reason, regarded as typhoid Of these twenty three have been pronounced typhoid by the physicians in charge, while the others are of such a slight nature and have so few typhoid symptoms, as to make it at least doubtful whether they were really typhoid fever. Of the cases of undoubted typhoid, thirteen have been very serious, and the others not very serious. Four deaths have occurred, and at the time of writing there are one or two other patients in a critical condition. It will be noticed from these facts that the outbreak of typhoid fever in college began about October 20th, and the last case appeared about November 9th.

As soon as the serious nature of the disease was recognized, an investigation as to its cause was begun. Of course, at that time it was not known that the disease would be limited to the dates above mentioned, and it was regarded as possible that there was in college a constant source of infection. The students that were sick were found to room in all of the college buildings, and also in several houses in town. Moreover, it was seen that they did not board at the same boarding-place, and there appeared at first, therefore, to be no connection between them except the college campus. The first object of suspicion was the water from two wells at the back of the college buildings, which was used occasionally by the students of the college for drinking purposes. On this suspicion the use of the water was immediately stopped, and an examination of the wells was made. Chemical examination showed in one of the wells an exceptionally large amount of albuminoid ammonia. The examination was made immediately after a heavy rain following a long drought, which might possibly have accounted for this. A bacteriological examination was set on foot according to the method of Professor Vaughn. Bouillon cultures from the water of each well were made and cultivated for two days in a culture oven. Then 20 c.c. of the culture was inoculated into the abdominal cavity of white rats. The white rats, however, were entirely unaffected by the treatment, indicating plainly that pathogenic germs of a typhoid nature could not have been present. Moreover, a little inquiry soon showed that the wells could not have been the cause of the trouble. In the first place several of the students who were sick had certainly not drank from either of the wells. Secondly, the wells were used almost as much by certain young people from the town as by the students themselves, and there was no corresponding outbreak of typhoid in the city. In fact, Middletown, at

the time, proved exceptionally free from all kinds of fevers. These facts taken together, made it necessary to exclude the wells from the possible sources of infection.

It was noticed at the outset that the ladies of the college, about fifty in number, were exempted from the disease. This, of course, indicated that the cause of the infection could not have been in any unsanitary condition connected with the public college buildings in general, but must have been some source of infection to which the young men were exposed, and not the young ladies. After carefully looking over the facts it was further found, that all of the cases of sickness, with three exceptions, occurred in three of the college fraternities. The men did not all room in the fraternity buildings, though most of them did board at the fraternity club houses. This localizing of the disease to three fraternities proved the first usable point of departure in the investigation.

In the college there are seven fraternities, and most of the college students board at the fraternity clubs. In the three fraternities afflicted there were about one hundred students, and among the one hundred students, as above stated, about twenty-five cases of typhoid developed. This is seen at once to be an extremely large proportion. It is usually supposed that some ten to fifteen per cent. of those exposed to typhoid take the disease, and here was a percentage at least twice that proportion. This large percentage indicated at once that there must have been some extremely virulent source of infection to which probably every member of the fraternities was subjected. In no other way could the large percentage of cases among the students be accounted for.

In the attempt to locate the source of the trouble in connection with the three fraternities, however, every source of possible contagion was investigated. The plumbing was examined, and though found to be defective in at least one case, in the other houses it was in first-class condition. It was hardly possible to accuse the plumbing, however, inasmuch as the three clubs afflicted were situated at a distance of half a mile from each other and were connected with different sewers. The probability that these three houses should have been defective in their plumbing at the same time was very remote, and their connection with different sewers, together with the absence of typhoid in the city, made it impossible to accuse the plumbing. The possibility of transference of the disease from house to house was also considered, an attempt being made to find some early case which could possibly have been a source of infection to the other houses. But this proved futile. There were no early cases, for almost at once, upon October 20th, two or three cases developed simultaneously, and, of course, this made it impossible to explain the epidemic by personal contagion. It was found, moreover, that the students who were taken with the disease in many cases had no connection whatsoever with the other fraternity houses, either through their room mates or otherwise. Another source of possible infection was suggested in a lot of new football suits which had recently been purchased, and which had been thought to have given rise to one or two cases of blood-poisoning. Inquiry, however, soon showed that most of the students who were sick had nothing to do with the football suits, and they were of necessity ruled out.

Naturally, one of the first objects of suspicion, after the disease had been located among the members of the three fraternities, was the table of the clubs. An examination was immediately made into the sources of supply of these three fraternities. All of them used the city water, which, of course, made it impossible to accuse the water as a source of the typhoid, there being no corresponding typhoid fever in town. The milk-supply of the three fraternities was also ruled out by several facts. The three fraternities were supplied by two different milkmen, and each of these milkmen supplied one or more of the other fraternities in college, as well as a large number of customers in town. Moreover, upon inquiry it was learned that these milkmen had not exchanged milk with each other, and that they lived at a distance of several miles from each other outside of the city. No cases of typhoid fever could be located in or near either of the milk-farms, as having occurred within the last six months. It was, therefore, impossible to accuse the milk. In the same way all the other articles of food used by the fraternities were investigated, without success. The three fraternities did not have the same grocer, nor the same butcher, nor the same butter supply, nor did they obtain fruits from the same sources; and whenever, in regard to any article of food, it was found that there was a point of likeness between the three fraternities, it was found at once that the other fraternities in college shared with them in having the same source of supply. After carefully inquiring into every article of diet used on the ordinary table, it was found necessary to exclude the table as a source of infection. The attempt was then made to find some special, unusual article of food that had been used during the fall by the three fraternities, but it was impossible to do so.

When the dates of the outbreak above given are considered, it will be seen that they have themselves almost conclusively pointed to one single source of infection that had occurred in these three fraternities at a date something like two weeks earlier than October 20th. The period of incubation of typhoid fever is known to be from about eight days to about twenty eight days, and all of the cases came in such close connection with each other as to indicate almost beyond question that they were due to one single source of infection, that occurred within two weeks prior to October 20th. On October 12th all of the fraternities in college held their annual initiation, followed by an initiation supper, and suspicion was soon thrown upon these suppers. The date of the suppers was exactly such as would be needed to explain the outbreak, and as soon as it appeared that new cases diminished after November 1st, these suppers became the most probable source of infection. When the initiation suppers were taken into consideration, one of the three exceptions above noticed disappeared, because one of the men who did not belong to the college fraternities had attended one of the three initiation suppers. An examination of the bills of fare at the suppers in question was therefore instituted. It was found that nearly every article of food must be excluded, on the same grounds as the articles of food at their ordinary table. Their milk, their water, their ice, their ice-cream, their fruits, their celery, and in fact, nearly all other articles of diet, they either did not obtain from the same source, or obtained them from a source which supplied every other one of the seven college fraternities as well as the people in town. There was found, indeed, to be but four points of union between the three fraternities. One was the celery used in the salad, a second a small amount of fruit, a third some ham, and the fourth the oysters which were eaten. The celery, the ham, and fruit, however, were from sources which supplied other clubs and a large part of the townspeople, and could, therefore, not have been the cause of the special infection confined to these three fraternities.

As soon, however, as it was found that the three fraternities each ate raw oysters from the same oyster dealer, the problems began, one after the other, to be solved. It was found that none of the other four fraternities ate these raw oysters. Two of them ate no oysters, a third ate oysters which, however, had been cooked, and the fourth obtained oysters from an entirely different source. Nor could it be learned that the lot of oysters had been used raw to any extent among the people in town, most people cooking their oysters. Another one of the abovementioned exceptions was also explained at once, because the student, upon being questioned, stated that about the time of the initiation suppers he had eaten of the raw oysters in the store of the oyster dealer. The oysters in question were served at each fraternity on the half shell, at the beginning of the supper, and it was, therefore, almost certain that nearly every person who attended the banquet ate of them. Correspondence and questioning, however,

were immediately instituted, which resulted in tracing in this way a connection between every student who was suffering from typhoid and these oysters, with one doubtful exception of a student who has not yet been personally questioned. It was learned also that there were in attendance upon these three suppers, in addition to the students in the college, a considerable number of alumni from out of town, and five students from Yale College. Letters were immediately written, therefore, to all of these persons to learn if they had eaten of the raw oysters, and whether they had suffered from any febrile disturbances. It must be remembered that the alumni were, as a rule, considerably older than the students, and it was, therefore, to be expected that the alumni would be more likely to be exempt from the disease than the students themselves. From twenty responses received from the alumni it was found, however, that there were two cases of genuine typhoid fever, which had developed simultaneously with those in the college, and that there were three other cases of sickness which had not been regarded as serious. These might or might not have had some connection with the banquet in question, though it is quite doubtful. Of the five students in Yale College, two were taken with typhoid symptoms at just four weeks after the banquet. Both of them developed into severe cases of typhoid fever. In regard to these two cases at Yale, it should, however, be noted that they appeared quite late, indeed four weeks after the supper had been held; and although four weeks is not too long a period of incubation to be possible, still it is unusual. They developed, however, at exactly the period that the last case in Wesleyan made its appearance. It is also a fact that there were two other cases of typhoid fever in Yale College that certainly had no connection with these banquets or these oysters, and it is therefore not certain that these two cases are to be attributed to these banquets. It is, however, a remarkable coincidence that of four cases of typhoid at Yale two should have been those who attended the banquet at Middletown and ate of the oysters in question, and that these two should have developed within the four weeks following the banquet. It is therefore at least probable that these cases were due to the same cause.

It will be seen that, as soon as the oysters were accused of the trouble two of the three cases above mentioned of typhoid occurring outside the fraternities, were at once explained. The fourth case remained isolated. This case was a member of the faculty, who had not attended either of the banquets. He was taken with a slight fever, and inasmuch as it appeared at about the same time with the students, it was regarded as identical with the other cases. It proved, however, a very slight fever, lasting only a few days, and it is therefore at least doubtful whether it was typhoid. Whether this person ate of the raw oysters cannot be positively determined. It is a fact that raw oysters were eaten at the table where he boarded at about the time of the banquet, but as yet no positive connection between the person and these oysters has been made out. Whether, therefore, this case is to be regarded as an isolated case of fever having no connection with the others and not strictly typhoid fever, or whether it is a fact that it is also explained by some connection with the infected oysters, has not been determined.

Inquiry was made at once as to the source of the oysters, and it was learned that while they had grown in the deep water of Long Island Sound, they had been deposited in the mouth of a fresh-water creek for a day or more to freshen. This freshening, as is well known, consists of the absorption by the oysters of fresh water which causes them to swell up and become plump. These oysters had thus been "fattened" before being sent to Middletown. Further inquiry showed that, within about three hundred feet of the place where they had been deposited, was the outlet of a private sewer coming from a house wherein were two cases of typhoid fever. The persons in question were a lady and her daughter. They were taken sick at such a period as to call in a physician for the first time October 11th, which, of course, means that the disease had been in its period of incubation for probably considerably over a week earlier. The oysters were sent to Middletown on October 10th, and therefore they were deposited at this place in exactly the time to receive contamination during the early days of these two cases of typhoid. Of those two cases one proved extremely severe, and the lady died on October 21st. In the other case, the fever, after running about five weeks, disappeared and convalescence set in. It is, of course, very easy to understand that the typhoid germs could have found entrance into the oysters from this source of contamination. Now, it has been known for some time, having been shown by Foster and Freytag, that the typhoid germs will live for a long time in sea-water, or indeed, in a concentrated salt solution. Specimens of the oysters from the creek, however, were put into the hands of Dr. Foote, of Yale College, who soon showed that if the typhoid germs were forced in between the two valves of the shell they would remain alive in the oyster for a time sufficient to enable the oyster to be carried to Middletown and to be used at the initiation banquets. Whether or not they will grow and multiply in oysters, has not yet been positively determined.

Shortly after the oysters had been placed under suspicion, it was learned that there were at Amherst College several cases of typhoid fever. Correspondence was instituted, which resulted in showing that at Amherst there had been held an initiation supper on the night of October 12th. Most of the cases of typhoid at Amherst occurred among the members of one fraternity, who, as at Wesleyan, neither roomed nor boarded together. They, however, had attended the initiation supper on October 12th, had eaten of raw oysters at the supper, and inquiry showed that these raw oysters also came from the same place as the Wesleyan oysters, and had been fattened in the mouth of the same creek. As at Wesleyan, certain wells were first placed under suspicion, but examination showed them to be good. While, of course, this did not conclusively demonstrate that the cases at Amherst were due to the same source of infection as that at Wesleyan, it rendered it at least probable.

The facts above related, it will be seen, point with conclusive force to the oysters as the cause of the typhoid outbreak. The dates of the outbreak, October 20th to November 8th, plainly point to one source of infection about October 12th. The fact that two cases of genuine typhoid developed at the same time among the alumni, and that two others appeared also among Yale students, none of whom have had connection with the three fraternities later than the initiation supper, or before that time, plainly demonstrates the initiation supper on October 12th as the time of the infection. At these initiation suppers only one article of food or drink was used which was not used by the other fraternities in college and by the people in town in general. That one article of food, the raw oysters (not eaten raw by people in town in general), was learned to come from a place where it was certainly subjected to a probable contamination of typhoid fever from two severe cases of the disease. The use of raw oysters from the same locality elsewhere, has been found, at least in one case, to have been followed by a similar outbreak as occurred in Wesleyan. These facts taken together, leave no possible doubt that the Wesleyan typhoid fever was caused by the oysters in question.

It must not, however, be inferred that because the lot of oysters supplied at these initiation suppers was infected, therefore, that all the oysters from the same locality would be thus infected. The public press has certainly exaggerated the condition of affairs. The oysters from the same locality were widely used in Connecticut, and doubtless in many cases have been eaten uncooked. There has been, it is true, quite a little typhoid fever in Connecticut during the past month, but it has not been possible thus far to trace very much of it to the

eating of raw oysters. The probability is that the oysters fattening in the locality in question would not, as a rule, be contaminated, but that it would only be an exceptional condition that would produce the result. It would be necessary that they should be lying in this place at just the period when the typhoid germs were swept by the currents or eddies from the sewer over the oyster-bed; and such a condition, even though there might be continued cases of typhoid in the course of the sewer, would doubtless not by any means be a constant one. Oysters, as a rule, are said to open their shells on flood-tide rather than ebb-tide, and this would, of course, make it more difficult for them to be contaminated by sewage from sewers above them on the creek. While this would by no means make the chance of contamination impossible, it would certainly render it less. It is not to be supposed, therefore, that the oysters deposited in the creek for fattening would all, or indeed many of them, become contaminated by the typhoid material, but that only exceptional conditions would produce the result. Where a private sewer containing typhoid excreta opens in the vicinity of such an oyster-bed, the danger must certainly be considerable. Where the typhoid material is mixed in the city sewers with the large amount of sewage, and is subsequently diffused through a considerable body of salt water when the sewer empties into the sea, the danger of oyster contamination must be considerably less. But there must be danger to public health from oysters fattened in any fresh water in the vicinity of sewage.

Doubtless many cases of mysterious typhoid have been due to such a cause. To trace these cases is a matter of extreme difficulty. The peculiar conditions which have occurred here have been such, however, as to bring the matter into clear light, and to throw with certainty blame of typhoid distribution upon a source which has for some time been suspected, but not demonstrated. That the practice of fattening oysters in the mouth of rivers and in the vicinity of sewers is dangerous to the public health, is beyond question shown by the combination of conditions which have made it possible to trace the Wesleyan typhoid outbreak to the eating of a lot of infected raw oysters.[1]

AN IMPROVED METHOD OF THE RADICAL OPERATION FOR CARCINOMA OF THE BREAST.[1]

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SINCE Heidenhain has shown that in a great number of cases of cancer of the breast the pectoralis major muscle is also involved by the disease, and that, if left in place, the growth is more liable to recur,[2] it has become, I believe, the duty of the surgeon always to remove this muscle with the breast and the axillary contents. Only, if carried out according to this plan, the operation should be called radical.

According to well-known methods the surgeon generally first removes the breast with the axillary contents. If he believes in doing in every instance as radical work as feasible in fighting this treacherous disease, he will then cut out the pectoralis major muscle from its origin to its insertion.[3] It means no serious addition to the operative procedure, but rather still more radical work, also to extirpate the pectoralis minor muscle at the same time. It enables the operator to remove the loose connective tissue and fat under this muscle, which is often diseased.

Within the last three years I have operated, according to this plan, on six female patients, and found by increasing experience, with reference to the technique:

1. That the extirpation of the pectoral muscles, carried out in this way, means an addition of about fifteen to twenty minutes to the operation, including ligatures.

2. That it saves blood and time to first cut off the insertion of the muscles on the humerus and coracoid process, and then to reflect the muscles downward. The arteriæ perforantes being on the stretch, can then be well seen and caught with the forceps close to the intercostal muscles, before being divided. If we pursue the reverse method, viz., cut off the origin of the muscle on ribs and sternum first, and then turn up the same toward the humerus, these arteries often tear near the intercostal muscles and the ribs. It is then difficult to catch and ligate the bleeding points.[1]

The parasitic theory of the etiology of cancer is yet unproved. On the other hand, inoculation of small pieces of cancerous tissue into the peritoneal cavities of animals has been successful. A cancer of the same type developed in such a spot. Clinical observations also make it highly probable that small particles of cancer-tissue, if entering hitherto healthy tissue, can there produce the same growth. Kraske gives a *résumé* of the special literature on this subject, and relates two very interesting cases in this respect.[2] He found in two cases of ulcerating cancer of the rectum, where the tumor could just be reached with the finger, low down immediately above the sphincter muscle, secondary small cancerous nodules of the type which was represented by the main growth. In both patients a healthy strip of mucous membrane, of at least 10 ctm. length, was interposed between the original and, as he explains it, the secondary tumors. He believes that the latter originated from the proliferation of the living epithelial cells which had severed their connection with the primary carcinoma, and had then been implanted in the lower portion of the rectal mucous membrane. Small tears in the latter, made by the examining finger or instruments, the hyperæmia and catarrhal condition of the lower end of the rectum always present in these cases, will favor the development of the inoculated particles.

With reference to the breast, the unavoidable handling of the tumor by the operator's hands and the assistants' hooks has been considered harmful, and called upon to explain the distressingly low percentage of cures after the operation. It has been assumed that during these manipulations cancer-cells or, if we accept to-day the theory of the parasitic origin, the parasites themselves, might be pressed into the lymphatics and thus disseminate the disease through the body.[3] It has therefore been proposed to attack the axillary cavity first, clean out its contents before severing their connection with the breast, and then to remove the breast and axillary contents together.[4] This procedure may be of some importance. Yet there are multiple other lymphatic vessels, which are

[1] Read before the Section on Surgery of the New York Academy of Medicine, November 12, 1894.

[2] Lothar Heidenhain: Ueber die Ursachen der localen Krebsrecidive nach Amputation Mammæ. Verhandlungen der deutschen Gesellschaft für Chirurgie, Berlin, 1889, and von Langenbeck's Archiv für klin. Chir., 1889, vol. xxxix., p. 97.

[3] Heidenhain believes that it might be best to remove the strip of periosteum of clavicle and sternum, to which the muscle is attached, with the latter. Before making this addition to the operation, I, personally, should rather wait and see whether future observations prove that by leaving in place the respective pieces of periosteum a regional recurrence is favored.

[1] The arteriæ perforantes are branches of the intercostal arteries. They are of tolerably large size. After having traversed the intercostal muscles, which they supply with blood, they enter and feed (besides the serratus anticus major muscle and a portion of the abdominal muscles) the pectoralis major muscle and the mammary gland. Heidenhain emphasizes the fact that these arteries and their ramifications are accompanied by cancerous lymphatics above the fascia of the pectoralis major muscle. He therefore advises to divide the vessels "within" the latter. It is, in my opinion, a still better plan to divide them "underneath" the muscle, just above the intercostal muscles.

[2] Centralblatt für Chirurgie, p. 801, 1880.

[3] A. G. Gerster, on the Surgical Dissemination of Cancer, New York Medical Journal, February 28, 1885.—It has been my personal misfortune to have had among the patients on whom I removed a cancer of the breast, quite a number in whom there was no regional recurrence of the disease, but who died within one year and a half after the operation, helpless, almost paralyzed, and with great pains, from metastatic growths in the spinal column.

[4] Gerster: Loc. cit.

not touched by the knife in such an operation, and which can carry away infectious material in different directions, thus, for instance, to the opposite side, to the supra-clavicular region, etc. (It is, of course, understood, that in cases of long standing these regions may have become

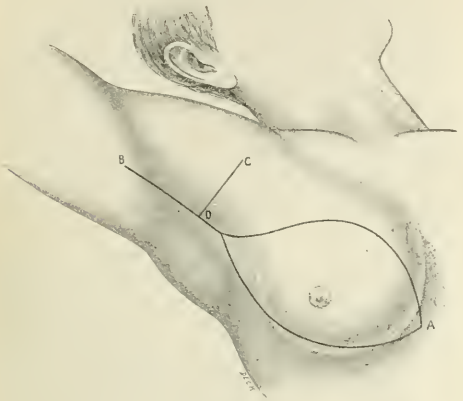

Fig. 1.

infected before an operation for the removal of the cancer of the breast is undertaken.) As Dr. Gerster wrote me the other day, the result, as far as recurrence is concerned, has not been improved by this procedure. This fact is a matter of course, since we know that the fascia of the pectoralis major muscle and this muscle itself, as well as the loose fatty tissue below the same and below the pectoralis minor muscle, so often are the seat of cancer. And this, not very rarely, in cases where the tumor is yet comparatively small and the breast freely movable over the underlying tissues.

The most harm is surely done during the manipulations with the knife, the hooks, and the hands "within the operating field itself," as long as we work "within" and not "outside of" the diseased area. During the operation lymphatic vessels between breast and fascia, those of the pectoralis major muscle, between and below the pectoral muscles, in the axillary, sub- and infra-clavicular fat, all more or less filled with epithelial cells, are compressed, cut, and torn. Their contents enter the fresh wound. Direct local infection of hitherto healthy tissue by cancer is liable to take place. I believe that especially the primary tearing off or preparing the breast tumor with the knife from the subjacent fascia of the pectoralis major muscle, or from the superficial layer of its fibres, if the tumor be adherent to the fascia—as it has been the general custom of operators up to date—may at times directly infect the large fresh wound with microscopical elements of cancerous tissue. It has been shown that just the fascia of the pectoralis major muscle and the superficial layer of fibres of the latter, often contain a very large number of microscopical cancerous deposits.

By first excising the breast with the axillary glands and then extirpating the muscles, the latter procedure forming the second part of the operation, we also increase the loss of blood. Many vessels are cut—and have to be tied—twice.

In view of these considerations I have thought that in order to avoid local or remote infection, also to save loss of blood, and still to be as complete in the work as possible, that the following might be an improvement: *Not* to excise the breast tumor in connection with the axillary contents first, and *then* to remove the pectoral muscles and clean out the sub- and infra-clavicular space; but "*to extirpate the breast, the contents of the axillary and of the sub- and infra-clavicular region, and the pectoral muscles, in one mass.*" In other words, I thought I would try and let the knife never enter the infected area (cancer), but work "everywhere" around the latter in healthy tissue, of course as far as this may be feasible in such cases.

For this purpose the operator must first come down to landmarks, when reflecting back the flaps of skin, before attacking the seat of the cancer proper. These landmarks, as I mapped them out, would be: *a*. Above: cephalic vein and clavicle. *b*. Outward: The tendon of the pectoralis major muscle on the humerus. *c*. Below: the border of the latissimus dorsi muscle. *d*. Inward: The sternal extremity of the clavicle and the sternum itself.

My plan of operation was the following:

1. Skin incision as usual, embracing a liberal piece of skin around the nipple, which incision is at once run up into the axillary cavity, about an inch and a half to two inches farther than in the ordinary operation. This in order more easily to reach the tendon of the pectoralis major muscle on the humerus. (See Fig. 1, A, B.)

2. Additional skin incision from the clavicle at the junction of its middle and outer thirds downward, meeting the first wound at right angles. (Fig. 1, C, D.)

3. Reflection backward of the three skin flaps with as thin a layer of the underlying fat as possible, leaving just enough so as not to endanger a future necrosis of the flaps,[1] exposing: *a*. The insertion of the pectoralis major muscle on the clavicle and sternum. *b*. The insertion of the same muscle on the humerus, the cephalic vein in Mohrenheim's sub-clavicular space (guide!). *c*. The border of the latissimus dorsi muscle. (See Fig. 2.)[2]

4. Division of the pectoralis major muscle in its tendon close to the humerus (the raised arm of the patient must be somewhat lowered for this purpose), and preparation of the same downward (Fig. 2) to its insertion on the clavicle. Here it is cut off at once down to the sternal extremity of the bone, in order to thoroughly expose the contents of the axillary cavity and the infra- and sub-clavicular region. During this time an assistant exerts some traction on the breast, to put the tissues on the stretch.

5. Preparation and excision of the sub clavicular, infra-clavicular, and axillary fat, glands and lymphatics, with the knife, beginning over the bundle of nerves and vessels high up in the cavity, and continuing this procedure from the lower border of the sub-clavian and axillary vein downward. As soon as freed, these contents, having been divided on the outer side from the fat in the

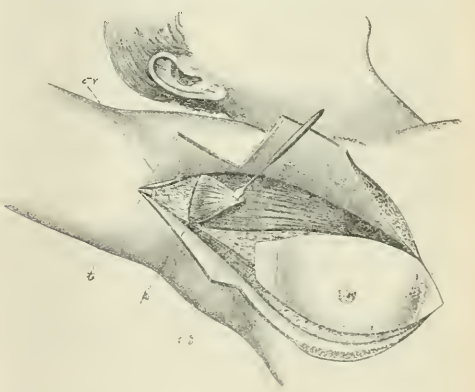

Fig. 2.—*b*, Pectoralis major muscle; *t*, tendon pectoralis major muscle; *c*, *v*, cephalic vein; *l*, *d*, latissimus dorsi muscle.

upper part of the sulcus bicipitalis of the arm, are raised and cut out from the outer side inward. This means, beginning from the border of the latissimus dorsi

[1] Further experience must show how much fat must be left attached to the skin. It means, no doubt, a better prognosis, with reference to recurrence, to say: "the less the better," or, "none whatever."

[2] This plate has been drawn by the artist without his having witnessed the operation. He was obliged to work guided only by my explanations.

muscle. This excision is continued, including the fat on the sub-scapularis and teres major muscles, until the chest-wall, viz., ribs, intercostal, and part of the serratus anticus major muscles, are plainly before us, and until the "lower" surface of the pectoral muscles is reached. Fat with glands and lymphatics are nowhere cut into, but remain in one piece and attached to the outer lower border of the pectoral muscles in their normal anatomical relation.

6. Division of the tendon of the pectoralis minor muscle on the coracoid process.

7. Gentle elevation of the breast and muscles by an assistant's hands in order to put the blood-vessels which enter and leave the pectoralis major muscle on the stretch. As mentioned above, they are clamped before they are divided.

8. Amputation of the pectoralis major muscle at its insertion on the sternal extremity of the clavicle, and of both muscles at their insertion on the ribs and sternum with the knife close to these bones. This insertion forms the pedicle of the whole mass. If cut off alongside the sternum after having been separated from the ribs, the extirpation of the cancer is finished.

9. Suturing of the wound as far as possible; plate-sutures for the sake of better coaptation of the skin-flaps, drainage of the axillary cavity as usual.

10. Dressing; the large defect is always to be covered with rubber tissue in order to favor rapid healing under the moist blood-clot; good compression.

Grafting of the resulting granulating wound, which will follow the removal of a liberal piece of skin, may be done in about eight or ten days without narcosis, ethyl-chloride being used for anæsthetizing the area of the arm or thigh, from which the grafts are taken. The granulating surface need not be scraped for this purpose.[1]

On September 19, 1894, I had my first opportunity to operate according to this plan.

Mrs. F. O——, aged thirty-seven. Slowly increasing tumor of the left breast since eighteen months. It never ached, and thus made the patient neglect to consult a doctor. Examination on September 15th showed a tumor of goose-egg's size in the centre of the breast. Nipple not retracted. Axillary glands hard and infiltrated. September 19th operation as just described, with the exception of omitting the additional incision from the clavicle downward. One upper flap only and one lower one were thus formed. This was a mistake. It somewhat impeded the easy reach of the attachment of the muscle on the clavicle. I should advise always to make this incision, especially in fat patients. I had done so, in fact, in my former cases, in which I first cut away breast and axillary contents, and then the muscles. The operation was not difficult. Only when preparing from the edge of the latissimus dorsi muscle inward and upward, in order to reach the chest-wall and the pectoral muscles (from below), I found it somewhat inconvenient in comparison with the former method of operating, to have the great mass of tissue above. Clever assistants will here be of great help. Temperature never rose above 100° F. First dressing changed on the sixth day; primary union throughout; drainage-tube removed; patient out of bed. To-day arm freely movable. The specimen which I hand around will show nicely, how radically the operation has been done. The whole mass is in one piece. The microscope substantiated the diagnosis of cancer.

As seen in this, as well as in my former cases, where I extirpated the pectoralis major muscle entirely, the loss of the latter never interfered with the motion of the arm. On the contrary, the patients were able to sooner move the arm in all directions than I have seen if the muscles be not or only partially removed. The strong inner (clavicular) portion of the deltoid is fully able to adduct the arm. Some patients complained of a tight sensation over the chest, they "felt their ribs exposed." This annoyance was soon, however, overcome. In order to avoid stiffness in the shoulder-joint, the patients should be ordered to begin with active and passive motions after the first change of dressing, viz., between the eighth till tenth day after the operation.

I am, of course, fully aware that also this most radical method of operation will not prevent recurrence of the growth "in loco," nor metastases in remote parts, especially not, if the patients be subjected to the operation in an advanced stage of the disease. Yet I venture to consider it a step in trying still further to reduce the chances of probably infecting the fresh wound and the entire system with cancer by our work "during" the operation; also to do as complete work as possible.

In this view I thought it permissible to communicate this method to the Surgical Section, having so far had only one personal practical experience.

Mr. President and Gentlemen, the idea of removing the carcinoma of the breast in this way was conceived by me last winter. By a peculiar coincidence not one case of carcinoma of the breast came under my care since then until September, even not during a four-months' service at the German Hospital. This paper was written in the latter part of September. It was announced to the Secretary of the Surgical Section at about October 20th. Before doing so, I had very carefully perused the newest literature, especially the elaborate articles on the subject by Dennis, Weir, and Bull, in order to ascertain whether others had removed a cancer of the breast in the way just described. I did not find this procedure mentioned. Now, ten days ago, on November 2d, the November issue of the *Annals of Surgery* has come into my hands. In this issue Dr. William S. Halsted, of the Johns Hopkins Hospital, has published a brilliant article upon the results of operations for the cure of cancer of the breast, performed by him at the Johns Hopkins Hospital from June, 1889, to January, 1894, in which he recommends practically the same way of operating just proposed by me, viz., the removal of the breast, fat, and glands of the axillary cavity and infra-clavicular region "in one mass." He thinks it advisable to explore and clean out also the supra-clavicular region in almost every operable case.[1] He has operated in this way on most of the fifty patients whose histories are recorded. As will be seen by comparison, our methods differ in some respects. I shall mention those which seem to me to be of some importance.

Halsted surrounds the base of the breast with an incision, and reflects a triangular flap of skin downward and outward.

I first reflect back three flaps of skin, two upper ones and one lower one, so far, until I reach the landmarks mentioned above, namely: the tendon of the pectoralis major muscle, the cephalic vein, the clavicle and sternum, the border of the latissimus dorsi muscle.

Halsted's third step of the operation reads: "The costal insertions of the pectoralis major muscle are severed, and the splitting of the muscle, usually between its clavicular and costal portions, is begun, and continued to a point about opposite the scalenus tubercle on the clavicle." The sixth step reads: "The splitting of the muscle is continued out to the humerus, and the part of the muscle to be removed is now cut through close to its humeral attachments;" and the eighth to tenth: "The lower outer border of the minor muscle having been passed and clearly exposed, this muscle is divided at right angles to its fibres, and at a point a little below its middle." "The tissue, more or less rich in lymphatics and often cancerous, over the minor muscle near its cor-

[1] Julius Schnitzler u. Karl Ewald: Zur Technik der Hauttransplantation nach Thiersch, Centralblatt für Chirurgie, 1894, No. 7, page 148. According to my experience, immediate grafting on the very uneven basis of the fresh defect is not advisable.

[1] This is, no doubt, a very wise addition. I shall certainly add this point to my plan of operating laid down above, in every case coming under my care. By lengthening the additional incision as proposed by me (Fig. 1, C, D,) upward above the clavicle, this operation can be easily and rapidly done. Of course, we shall clean out the supra-clavicular space thoroughly, by removing the fat with glands and lymphatics also "in one piece."

acoid insertion, is divided as far out as possible, and then reflected inward in order to liberate or to prepare for the reflection upward of this part of the minor muscle." "The upper, outer portion of the minor muscle is drawn upward with a broad, sharp retractor. This liberates the retractor which until now has been holding back the clavicular portion of the pectoralis major muscle."

In the manner as I have planned and performed the operation, the belly of the pectoralis major muscle, as well as that of the minor, is not touched at all. To repeat briefly what has been said above: I first cut off the humeral attachment of the pectoralis major muscle, prepare its upper border free from the cephalic vein, and detach it with the knife close to the clavicle. Then the muscle is turned downward and inward, until the tendon of the pectoralis minor muscle can be cut off from the coracoid process. Later—that means after the tissue over the bundle of vessels and nerves high up in the axilla, and after the axillary, sub- and infra-clavicular fat, glands, and lymphatics have been carefully prepared in the well-known manner, "but *left in their original anatomical relation to the breast and to the muscles*" [1]—both muscles are raised and cut away from above downward and inward.

Further: Halsted turns the mass over to the outer side and cuts it off on the base of the skin-flap, which had been primarily formed and reflected outward. This I believe will be more convenient for the operator.

As my procedure follows the direction of the fibres of the pectoral muscles from above downward, the mass must be turned upward and inward first, when preparing from the axilla, and then inward. A clever assistant will be easily able to hold it out of the way. When the pedicle, the sterno-costal insertion of the pectoralis major muscle, is reached, a few strokes with a sharp knife complete the operation.

Further experience must show whether Halsted's or my plan of operating deserves preference.

I personally should prefer the operation as proposed above and carried out by me. It seems to me to be more anatomical than that of Halsted. It also is, I trust, still more radical, since in every instance the entire pectoralis major muscle (and the minor) will be removed. I think, this is absolutely necessary, in order to do radical work. Heidenhain specially states, that he considers a muscle, which has been invaded by cancer, suspicious from its origin to its insertion. "Not a fibre of the muscle should be left behind." On this ground I should also prefer to abstain from all splitting of the pectoralis major muscle between its different portions. By *not* working within the belly of the muscle whatsoever, we shall, no doubt, be best guarded against infection of the fresh wound with cancer, and against regional recurrence.

The nucleus of the operation, however, is the following rule: "Lift *all* the tissue, that may be diseased, and often will be found on microscopical examination to be diseased *throughout*, out of its bed *in one piece*."

That this kind of radical operation will be "the" operation for the extirpation of carcinoma of the breast, there can be no doubt. It is proved by Halsted's unprecedented percentage of cures. He so far records cure in ninety-four per cent. of his cases, including the cases operated up to February, 1894, a number which has never been reached by a surgeon before.

I venture to hope that, by absolutely and continuously working everywhere around the seat of disease, by never trespassing on the belly of the muscles, and always removing the latter completely, this extremely gratifying result might be also secured by others.

Thus will then, at last, it is to be hoped, also this terrible foe of suffering mankind, this dread especially of the female sex, become oftener silenced and made more submissive to the surgeon's knife, provided the operation is done early, before remote parts of the system have become infected.

[1] The lower outer border of the minor muscle is thus not clearly exposed, but remains attached to the axillary fat.

A RÉSUMÉ OF THE SUBJECT OF BILIARY CALCULI.[1]

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To approach intelligently the question of the formation of biliary calculi it is necessary to have a clear conception of the physiology of the liver and of the biliary secretion in and from which they are formed. It is not essential for this purpose that we should deal here with the anatomy and minute histology of the liver, but we may proceed at once to a brief review of our knowledge of the bile itself. For, although from the size of the liver, and consequently its apparent importance, its function was studied as early as that of any of the other abdominal viscera, it was not until the full development of the sciences of organic chemistry and experimental physiology that satisfactorily definite information could be obtained concerning the secretions and functions of this organ.

Bile is formed continuously, but the rate at which it is produced is subject to great variations. The flow diminishes during abstinence, increases immediately after meals for about an hour, decreases somewhat thereafter, and again flows freely during the third and fifth hours of digestion. Much difficulty has been experienced in arriving at an approximate estimate of the quantity secreted in the course of twenty-four hours. There can be but little accuracy in reasoning by analogy from the secretion in the lower animals, and the operative fistulæ in man upon which observations have been made have in most cases existed under pathological conditions which would greatly interfere with the results obtained. Moreover, as the presence of the bile in the intestines influences the quantity and quality of the bile excreted by the liver the results obtained by the observation of biliary fistulæ must differ very much from those which would be produced were the bile pouring normally into the intestine to be partially reabsorbed by the portal system and returned to the liver. Thus we only know definitely that where reabsorption from the intestine cannot take place, the quantity of bile in man is from a pint to a pint and a half per day.[2] Under normal conditions we presume it to be somewhat larger.

Comparisons made between the pressure in the veins of the portal system and that in the bile-ducts have shown that the biliary pressure is two and one-half times as great as that of the blood supplied to the hepatic cell, proving conclusively that the process is not one of filtration but of definite secretion. As it flows from the intrahepatic ducts the human bile is a non-viscid fluid of a golden red color, sweet-bitter taste, feebly alkaline reaction, and a specific gravity of about 1.010. The viscidity which we usually associate with it is acquired from admixture with a substance secreted by the mucous membrane of the gall-ducts and gall-bladder. This is known as the mucoid nucleo-albumin of the bile, and increases in amount in proportion to the length of time the bile remains in the gall-bladder. The bile contains as the direct secretory product of the hepatic cell the so-called bile acids, glykocholic and taurocholic acids, the former preponderating, and the biliary coloring matter bilirubin, which is readily oxidized to biliverdin, or by intestinal action changed to other derivatives. In addition to these specific products of the liver it also excretes through the bile cholesterin, neutral fats, soaps, lecithin, traces of a diastatic ferment, mineral matter, and gases, of which the chief is CO_2. While, if we disregard the very slight traces of a diastatic ferment, we know that the bile has no power to decompose starches, proteids, or fats, we are still convinced that in addition to its excretory functions it undoubtedly plays a by no means unimportant part in

[1] Read before the Section on General Medicine, New York Academy of Medicine, November 20, 1894.

[2] Arthur Gamgee: Text-book of the Physiological Chemistry of the Animal Body, vol. ii., p. 276.

the intestinal economy by neutralizing the acidity of the chyme, and thus preparing the way for pancreatic activity, as well as its direct or indirect saponifying, antiseptic, and laxative effects.

Gall-stones, as shown by autopsy records, are of much more frequent occurrence than we would suppose were we to judge only from clinical evidence. Schröder found at the autopsies in the Strassburg Hospital gall-stones in 4.4 per cent. of the men and 20.6 per cent. of the women. They are rare under thirty years of age, more frequent from thirty to sixty, and after the latter age occur very often. Women, and especially those who have borne children, furnish by far the largest number of cases. The large majority of biliary calculi are formed and found in the gall-bladder; certain forms, however, may rarely be found in the larger ducts, or even in the intra hepatic ducts. Stones which are found in the cystic or common ducts have, however, almost invariably come from the gall-bladder. Their specific gravity is very low, so low that when dried they may even float upon water until the air which they contain has been expelled. The calculi are rarely single, but usually multiple (5 to 30), and have been found in a single case to the number of seven thousand eight hundred and two. In size they vary from fine sand to masses 15 ctm. in length. The average size is that of a hazel nut. They are composed chiefly of cholestrin, bilirubin calcium, and calcium carbonate, singly or in combination with each other. The color and consistence depends upon the composition. White or light-colored stones are entirely or largely composed of cholesterin; brown, green, and black tints are given by bilirubin-calcium, biliverdin, and other derivatives of the biliary coloring matters. Calcium carbonate is often found in a green external layer. All calculi from the same gall-bladder have usually the same composition, structure, and color. Their shape is affected by the space in which they lie. The facets upon their surface depend upon their numbers and are almost invariably due to mutual pressure while soft, and not to attrition.

When stones are sawn in two they present, as a rule, 1, a central nucleus; 2, a middle zone of multiple concentric lamellæ; 3, a laminated external layer or shell. These three divisions are very often of diverse color and composition. The nucleus is of the greater interest; it is more commonly formed of a combination of biliary pigment and calcium, called bilirubin-calcium, or of mucus and epithelial cells. These latter by desiccation may leave a hollow centre. Very rarely foreign bodies, such as needles or intestinal worms, have been found as the nucleus of the concretions.

The most common and most numerous variety of cal culi, "the habitual tenants of the gall-bladder," are the mixed cholesterin calculi, yellow or whitish-brown in color, occurring in groups of varying numbers, often 70 to 100 together, from the size of a pin's-head to that of a small cherry, faceted by mutual pressure, frequently lamellated on section, and often soft and friable before exposure to the air. Other much rarer varieties of cholesterin stones are the white crystalline and the stratified cholesterin calculi. The former are usually single, often of considerable size, of pure white transparent crystalline structure, and are usually found in a recess of the gall-bladder or in the common or cystic ducts, encircled by the wall, which is frequently even adherent to the stone. The stratified variety, although containing sixty per cent. of cholesterin, are usually darker from an admixture of biliary coloring matters, and more frequently multiple and faceted than the former. On section they appear to be formed of concentric lamellæ of varying color, throughout which crystallization, beginning at the centre, has advanced to variable distances.

Less frequent as a class than the cholesterin stones are those formed of the compound of bilirubin and calcium. These may rarely be pure, in which case they are small, dark concretions. Usually, however, they are mixed with some cholesterin or calcium carbonate, in which case they are still dark, occur singly or at the extreme by twos or threes, are found in the gall-bladder or ducts, and are made up of broad, structureless lamellæ which may be arranged about a crystalline cholesterin nucleus. Other occasional forms are described, including those made up of calcium carbonate.

When we approach the question of the formation of gall stones we have to deal with a delicate problem. It has long been recognized that increasing age enhances the liability to biliary lithiasis, as well as anything which tends to retard the movement of the bile in its passage. Now two of the main factors in keeping up a movement of the bile are exercise and deep respiratory action. Both of these are usually lessened as age advances, and to these may be added sedentary habits, and, in women, diminution of diaphragmatic respiration by the wearing of corsets and during the existence of pregnancy.

Neither heredity, nationality, diet, nor diathesis seem in any way to influence the incidence of cholelithiasis, for the amount of cholesterin and calcium salts in the bile bears no relation to the general tissue change or to the food of the patient, but they are constant in their amounts as proven by elaborate experimentation. We know that while bilirubin is abundant in the bile, cholesterin is excreted in comparatively small quantities, yet we have just seen that the cholesterin stones are by far the largest and most numerous, while bilirubin-calcium enters into the composition of calculi in smaller amounts and less frequently. We must therefore look for some local causative factor which shall explain the precipitation of the elements of the calculi from the biliary secretion. Naunyn[1] believes this agent to be the bacterium coli commune, which penetrates from the intestine along the ducts to the gall-bladder. When there is no stasis in the biliary system, and the gall-bladder is frequently emptied no harm results, but if the flow of bile be retarded the continued presence of the bacterium sets up a catarrhal condition of the mucous membrane, during which calcium salts are excreted by it in excess. These combine with the bilirubin to form bilirubin-calcium, and the albumin from the mucous membrane of the gall-bladder aids in its precipitation. On the other hand, the cholesterin, of which by far the larger number of stones is composed, has been conclusively shown to be the product of the epithelium of the ducts and the gall-bladder, and to bear practically no relation to the small amount excreted by the liver. This has been proven by the fact that the percentage of cholesterin increases in the bile in proportion to the time it remains in the gall-bladder, and also that pure cholesterin stones will increase in size in the gall-bladder when there exists complete occlusion of the cystic duct, whereas, for the growth of bilirubin stones fresh supplies of bile must at least reach the gall-bladder at intervals. Naunyn found that in the gall-bladder of persons dying with gall-stones the epithelial cells contained or were extruding myeline masses of a glassy, structureless character, which under the action of acetic acid became clumps of cholesterin crystals. These myeline masses are then rudimentary or embryonal calculi, ready to crystallize upon any opportune object, usually about little masses of bilirubin-calcium or clumps of epithelial cells and mucus. If now there be free exit for the bile through the cystic duct, these microscopic masses may be swept out by the flow of bile into the intestine, but if the flow be tardy, or there be obstruction, their further growth, by the addition of subsequent lamellæ is readily understood.

The radiating crystalline character which is noticed throughout the whole or a part of many of the pure or mixed cholesterin calculi requires a word of explanation. This is a subsequent change which takes place later and more slowly than the growth of the stone by the accretion of structureless cholesterin. The process begins in the centre, either in an original cholesterin nucleus, or more often in myeline material which has penetrated by infiltration and filled a hollow at the cen-

[1] Klinik der Cholelithiasis. Leipsic, 1892.

tre left by the drying or escape of soft or semi-fluid substances which formed the original nucleus. From this centre crystallization extends outward in radiating striæ through the different lamellæ, aided perhaps by fresh cholesterin, which penetrates from the outer zone along minute canals called infiltration canals. It is even possible that, during this process, in many cases, bilirubin-calcium may be dissolved and displaced.

It is hardly necessary for me to consume your time in reciting the classic symptoms of biliary colic—sudden pain, chill, fever, sweating, vomiting, and often, later, swelling and tenderness of the liver, distention of the gall-bladder, discoloration of the urine, icteric hue of the skin, and clay-colored stools. Of far greater interest to us, as pertaining to diagnosis, are the more unusual variations. It is very difficult to understand in all cases why stones which have lain quiet in the gall-bladder for a long period should suddenly be forced into the cystic duct. Where errors in diet, over exertion, falls or jars, child-birth or menstruation have immediately preceded, it is easier to form an hypothesis and believe that unusual peristaltic action is excited in the walls of the gall-bladder, either indirectly by reflex nervous influences, or directly from extension outward along the muscular fibres of the bile-ducts of unwonted peristalsis in the intestine. Prodromal symptoms in the way of sensitiveness in the epigastrium, chilliness or slight icterus, sometimes exist for a day or two before the attack of colic; but it is much commoner for this to begin suddenly. Murchison[1] states that the attacks occur shortly after the ingestion of food; Naunyn, however, contends that they are more likely to take place some hours after eating, when the chyme begins to pass into the duodeneum and thus explains the frequent occurrence of a first attack about midnight. The pain of biliary colic is usually severe and hard to bear, of a rending, boring character, and radiating upward. In other instances, however, it may only amount to a slight burning sensation, or even be entirely absent. Fever may either be absent or play a very important *rôle*. It is frequently preceded by a chill, and is generally of short duration, but may continue for days if the other conditions persist. Vomiting is usually severe and prostrating. Occasionally it brings to light some of the stones which have caused the attack. The muscular contractions or cramps in the abdomen, legs, arms, or hands are of reflex origin. With these symptoms only the attack may terminate, after a short time, by the falling back of the stone into the gall-bladder, or by its passage from the common duct into the intestine; but if its progress is slow after it has reached the common duct other symptoms are added. The bile, which is secreted continuously, cannot escape by its usual outlet but distends the gall-bladder, which may be felt in one-third to one-half of the cases under the right rectus or to the outer side of that muscle. The gall-bladder filled, the intra-hepatic ducts become distended, with resulting tenderness and enlargement of the liver, and finally the bile is forced into the lymphatics and passes through the thoracic duct into the blood. Here it first shows itself in discoloration of the urine, but when it passes into the blood more rapidly than it can be excreted by the kidneys it begins to be deposited in the tissues, revealing itself first in the conjunctivæ and later in varying intensity in the skin. The bile being thus diverted from the intestine the stools become pale or clay-colored and the movements constipated.

As is the case in many another affection, of which the text-book description is clear and classical, in actual experience there are many variations in the occurrence, intensity, and sequence of the cardinal symptoms. As Charcot[2] has pointed out, the chill may precede the pain, or the chill and fever may not be proportionate to the intensity of the pain. In other persons there may be pain and chill without fever, or fever without chill, or fever without pain. Many of the attacks, estimated at fifty per cent., pass off without jaundice, or this may develop, with its attendant train, as early as twelve hours after the inception of the attack. The duration of the pain may be half an hour or half a day, or it may persist continuously or recur intermittently for several days.

Without going exhaustively into the question of differential diagnosis it may be mentioned that where icterus is absent the case must be distinguished from cardialgia, lead colic, renal colic, fecal impaction, peritonitis, appendicitis, and intussusception. Death, though rarely, may occur during the course of an attack, from suicide, collapse, syncope from pre-existing cardiac lesions, or rupture of the ducts or gall-bladder, with consequent infectious peritonitis. In the latter instance prompt laparotomy has saved life.

If, as Naunyn claims, in old age every tenth man and every fourth woman has gall stones, how shall we reconcile this fact with the infrequency of biliary colic in general, and among the aged in particular. Sénac believes that hepatic colic originates only between the twenty fifth and thirty-fifth years, and that after sixty stones are frequently passed without reaction or pain. It is quite possible that calculi in the gall-bladder may be not only latent but entirely harmless; in fact, unless their mere mechanical presence cause ulceration or infectious conditions they give no signs of their presence until they enter the ducts. Arrayed on the one hand as factors opposing the progress of the stone are the small size and peculiar conformation of the ducts, the elasticity of the walls, and the reflex spasm of the muscular fibres from irritation, as well as the size, consistence, and form of the stone itself. On the other hand, assisting its progress we have the slight pressure of the bile and the much more important peristaltic contractions of the muscular coat of the gall-bladder and ducts. The cystic duct has a diameter of but 3 mm., while that of the common duct is 6 mm. Here we perhaps have an explanation of the partial alleviation of the pain which often takes place in the course of an attack, probably as the stone passes from the smaller cystic to the larger common duct.

While after death the gall-ducts offer much resistance to attempted dilatation, it is evident from post-mortem findings in those who had suffered from repeated passage of gall-stones that the ducts can not only be dilated but remain so permanently. The opening of the common duct into the duodenum is the least distensible portion, as shown by the greater frequency with which stones are arrested at this point than at any other. Histology has contributed the important fact that in youth muscular fibres are abundant in the walls of the ducts, but that in old age they are much atrophied or have disappeared entirely.

We are now in a position to understand some of the possibilities why the passage of stones in different cases and at different ages may be accompanied by such varying reaction. If, as we may readily concede, the pain of biliary colic is due to the stretching of the ducts and the reflex spasm of their walls, we can see that the passage of a small calculus through an already dilated duct may be accompanied by little or no pain, while it is easy to conceive, with Naunyn and others, that the atrophy of the muscular fibres in old persons either prevents the violent peristalsis in the gall-bladder which forces the stones into the duct, or renders impossible the reflex spasm of the duct, which is probably the chief source of the pain, so that gall-stones which are much more frequent at this age may remain indefinitely in the gall bladder or be passed without the knowledge of the patient. A very few persons escape with but one attack of biliary colic in a lifetime. Most frequently, however, the attacks are repeated at longer or shorter intervals. The successive attacks in the same individual may be marked by great differences in the intensity of the suffering, or one may be of short duration, the next extend with exacerbations and remissions over several days.

One stone or many may pass during a single attack. One instance is recorded where two hundred and forty-

[1] Clinical Lectures on Diseases of the Liver.
[2] Leçons sur les Maladies du Foie. Paris, 1887.

four calculi were recovered from the stools in five days. Smaller numbers are much more frequently found. Much difference of opinion has existed as to the size of stones which can be passed through the ducts. The majority of those so passed are not larger than peas; it is probable, however, that calculi as large as the kernel of a hazel-nut can also pass. The chief hindrance, as we have already seen, is usually encountered where the common duct enters the duodenum. Here a rupture of the tissues with the formation of a duodenal fistula may allow even a large stone to escape. Recorded instances of the passage per anum of very large stones are probably the result of direct ulceration from the gall-bladder into the intestine.

Directions are usually issued that the stools shall be examined for calculi after an attack of colic, but the concretions are not always found, often because of careless methods or lack of persistency. The surest method is to pass the softened stool under the action of running water through a piece of muslin or a hair-sieve. This treatment should be extended to all stools for eight days, for although in most cases the stones appear in the fæces after twenty-four to forty-eight hours, cases are recorded where they have been retained until the eighth day. Apropos of this question, one fact which is not generally appreciated is worthy of especial consideration. Experimentation by causing gall stones of varying composition to be swallowed by healthy men, and search instituted therefor in the stools, has shown that only firm or hard stones, or those having a hard cholesterin shell, reappear in the dejections. Soft stones and those of pure or mixed bilirubin-calcium suffer disintegration in the intestine. Naunyn, in his extensive researches, has found but one such stone in the stools, and that showed signs of erosion. It is therefore evident that however valuable may be the positive evidence of stones passed per rectum, the failure to find the same cannot be considered as proving that the preceding attack of pain did not result from the passage of a calculus.

Besides the acute attacks above described, accompanying the expulsion of calculi through the biliary passages, there is a further extensive group of affections of the liver and biliary tract dependent upon the continued presence of calculi. These are grouped under the comprehensive term "irregular cholelithiasis." An attack of acute biliary colic may end in three ways: 1, By the falling back of the stone into the gall-bladder; 2, by its expulsion into the intestine; 3, by its impaction in the biliary passages. Stones thus impacted usually give rise, for a time at least, to repeated attacks of colic, and it is evident that the occurrence of jaundice and associated symptoms will depend upon whether the site of the impaction be in the cystic or common duct. Gall stones are often found post mortem in these ducts. The majority are large stones, larger than cherries, ofttimes they are the size of a walnut or even greater. Such stones may have been formed *in situ*, but in the majority of cases they are doubtless stones which have become impacted and grown by accretion. They may allow the bile to pass them into the intestine, in which case they may exist for years without harm and without symptoms. They may furnish the necessary factors for the development of various infectious and ulcerative conditions, or again they may intermittently or permanently interfere with the exit of the bile. In the latter event chronic icterus results.

When chronic icterus is established, and this may happen as readily from a stone which has lain for years in the duct as from a freshly impacted calculus, the patient may succumb as early as the tenth day, or he may live for weeks, or months, or even years. It is not the obstruction alone which causes death, but the complications to which it gives rise. Everything depends upon whether the obstruction is partial or complete. If the occlusion of the duct is absolute, so that no bile can pass, the ducts behind the obstruction become dilated, the gall bladder is distended, jaundice increases, gastric and intestinal digestion become disturbed, and the patient succumbs from hemorrhage or from emaciation and marasmus. Where chronic icterus exists, with but intermittent or partial obstruction, the degree of icterus is variable, the liver remains of normal size, or is but slightly enlarged, and there is no distention of the gall-bladder. Itching of the skin is usually a distressing symptom, and hemorrhages from the mucous membranes may take place, but the intestine continuously or intermittently receives some bile, as shown by the color of the fæces, and the nutrition of the patient does not suffer as rapidly as in the previous case.

Among the common baleful results of cholelithiasis, more especially with obstruction of the common duct, is the production of cholangitis, or an inflammation of the biliary radicles. Here again we find the bacterium coli commune as a specific cause of the infection of the bile. Cholangitis is not always purulent, even when it produces fatal results. Where the process has been distinctly suppurative, cultures have shown an admixture of staphylococci and streptococci. Still greater importance attaches to the fact that cholangitis leads to cholecystitis and hepatic abscess. Infectious cholecystitis is excited by the presence of the bacterium coli commune where calculi are retained in the gall-bladder, especially when the cystic duct is blocked by a stone. The contents of the gall-bladder are at first the retained bile and the infected secretion of the mucous membrane. The biliary constituents are, however, promptly reabsorbed and the gall-bladder then is filled with a sero-purulent fluid, containing usually but a small number of pus-cells. The more abundant the pus the more applicable to this condition is the term "empyema of the gall-bladder." This should be clearly distinguished from a condition known as "hydrops of the gall bladder" which arises when the cystic duct is blocked without previous infection of the contents. The bladder then contains after a time a semi-transparent strongly mucilaginous fluid, which is sterile and without any traces of pus.

Hepatic abscess above referred to may result from suppurative cholangitis, by extension from an empyema of the gall-bladder, or from the pressure of a stone in the common duct upon the portal vein causing thrombosis and pylephlebitis. Carcinomatous involvement of the biliary tract is of such frequent occurrence with cholelithiasis as to suggest strongly its dependence upon that condition. Its possible existence should always be kept in mind in cases of chronic jaundice occurring in old people.

What, then, is the fate of the stones which remain in the gall-bladder? In many instances doubtless they remain unrecognized and innocuous, for they are revealed by the necropsy when no symptoms occurred during life which could be referred to their existence. But in other cases their presence is more or less pernicious. Hypertrophy of the muscular fibres of the gall-bladder occurs, with slow contraction of the viscus about the mass as a whole, or else it becomes sacculated with enclosure of one or more calculi in the recesses. Sooner or later a desquamative catarrh of the mucous membrane is set up, with thinning or ulceration of the mucosa from pressure. Ulcerations may heal with the production of cicatrices, or perforation of the walls may take place with consequent peritonitis or the formation of an encapsulated abscess beneath the liver; or again, where adhesions have previously been formed to the other viscera or to the abdominal wall, fistulæ may be formed opening externally, or into the stomach, duodenum, ileum, or colon. Through these latter fistulæ the stones incarcerated in the gall-bladder may escape into the gastro-intestinal tract and be passed per anum, provided their smallest diameter does not exeed 3 c.m., otherwise they may be arrested at the ileo-cæcal valve. Larger stones or masses of small stones have often caused intestinal obstruction and called for surgical interference.

The treatment of biliary lithiasis naturally resolves itself into four divisions: 1. Treatment of the acute attack. 2. Treatment directed to resulting conditions.

3. Prophylaxis against repetition of the attacks. 4. Surgical indications in acute and chronic cholelithiasis.

During the acute attack the indications are clearly to relieve the pain, relax the spasm, facilitate the expulsion of the stone, and prevent subsequent complications. The pain of biliary colic is usually so intense that the patient demands that our first efforts be directed to its relief. This is most promptly and efficiently accomplished by the subcutaneous injection of morphine in full dose (gr. ¼) repeated at intervals according to indications. Morphine, however, may aggravate rather than allay the vomiting, and also tends to decrease the biliary secretion. It is therefore best combined with atropine, which does not influence the secretion of bile, but does restore the disturbed tone of the muscular fibres, assisting in the subsequent expulsion of the stone by normal peristalsis in the ducts. Where the attacks are prolonged opium and extract of belladonna by the mouth are better borne than morphine, and in very long or intermittent cases other analgesics—antipyrine, chloral, amylo-valerianic ether, or sodium salicylate may be wisely substituted. Relaxation of the spasmodic contraction will be favored by prolonged hot baths (95° to 100° F.), and chloroform by inhalation may be temporarily required. Vomiting is best allayed by repeated large draughts of sodium bicarbonate and hot water (℥ j.–℥ ij. to Oj.). This is at first rejected but afterward retained. Later gastric irritation may call for the usual sedatives—bismuth, dilute hydrocyanic acid, and carbonated waters. The pain and spasm somewhat relieved, our next interest is to hasten the passage of the calculus through the duct. For this purpose such cholagogues as are known to favor the secretion of more abundant and more fluid bile must be called into requisition. Salicylate of soda, besides its analgesic power, stands here in the front rank, with ox-gall, glycerine, and calomel. Ferrand's[1] experiments not only show that glycerine in massive doses (℥ v.–℥ j.) is taken up by the lymphatics of the stomach and carried to the liver, where it produces a free secretion of fluid bile, but its ingestion has also produced prompt alleviation of the pain and apparent passage of the stone. Calomel, like other metals, is arrested by the liver, where it passes into the portal system, and produces a direct stimulation of the hepatic cells. Ether and chloroform act reflexly by their action on the stomach. Aloes, euonymin, and podophyllin, and the benzoates of sodium and lithium are also much vaunted in this connection. Durand's mixture — ether, 3 parts, turpentine, 2 parts — once much in vogue in doses of ℥ ss.–℥ j. in bouillon, but badly borne by the stomach, has now been relegated to the treatment of more chronic cases. Olive oil, recommended by Chauffard in doses of ℥ vj.–℥ viij., and given in two portions, with an interval of a quarter of an hour, with the patient lying upon his right side, is both safe and inoffensive, and often well tolerated by the stomach. Willemin has seen it followed by almost instantaneous relief of the pain, which occurred so quickly as to be probably the result of reflex action. The more prolonged the attack, the greater the danger of secondary complications. When congestion is marked and inflammatory conditions in the liver threaten, moist heat applied over the liver by poultices or fomentations relieve pain by lessening congestion, and reduce the liability to inflammatory reaction. If the process be more advanced and there be signs of cholecystitis or hepatitis, more active antiphlogistic remedies may be indicated—eight to ten leeches, mustard or vesicants, or cold in the form of ice-bags may be cautiously employed.

Infectious cholangitis and hepatic fever call for antiseptics which will be excreted in the bile. Calomel is best given in three to eight grain doses every two to three days. The benzoates, and especially benzo-naphthol, have been strongly endorsed. Salol and salicylate of soda are particularly useful when there is fever. In considering certain of the above indications for treatment it is impossible to sharply distinguish between cases of short and long duration, if we would avoid useless repetitions, and much that has been said is applicable to cases where the stone remains impacted in the duct. In the intervals between the attacks, to remove the impacted stone or to prevent the occurrence of fresh crises, glycerine, ℥ j. to ℥ iv. per day, may be given in slightly alkaline water, or olive oil may be administered in ℥ ij. portions at bedtime. A method taught in one of our largest clinics, and practised with considerable success, is the administration of the oil, once daily, in milk, one tablespoonful the first day, and an additional tablespoonful each day until upon the sixth day six are taken. Whatever the method of giving the oil may be, it should cease on the sixth or eighth day, and not be resumed until the same number of days have elapsed.

Prophylaxis is of course only applicable to those who have previously suffered from the passage of calculi. It is therefore to be considered after, rather than before, the treatment of the acute attack. It should be directed toward securing a free secretion of bile by the use of cholagogue remedies, and toward favoring satisfactory evacuation of the bile from the gall-bladder. To this latter end active exercise, massage, and hydrotherapy are useful in themselves, and also because they favor deep respiratory efforts. Our knowledge of the influence of diet upon the incidence of cholelithiasis is so slight that we can only caution against over eating and the excessive use of rich food-stuffs, alcohol, or condiments. Daily evacuation of the bowels should be secured, and the clothing should be such as to allow unimpeded play of the abdominal and respiratory muscles. No case of chronic biliary lithiasis need be considered hopeless, or, if the symptoms be not urgent, condemned to surgical procedures, before testing the result of a course at Vichy or Carlsbad, or some other of the hot sodium, or sodium and magnesium springs, for the results under such treatment are often surprisingly prompt and successful.

Surgical interference may be required both in acute and chronic cases. In the former, where rupture of the ducts or gall-bladder has taken place during the paroxysm, with escape of bile and threatened peritonitis. In chronic cases, to relieve an incarcerated calculus in the duct, or to remove masses of calculi from the gall-bladder when these conditions have caused ulceration, infectious cholangitis, cholecystitis, or empyema of the gall-bladder, especially where there is danger to the patient from the continued temperature, emaciation, or threatened general infection. Jaundice, and its accompanying hemorrhagic tendency enhances, many fold, the dangers of operative interference, but does not in itself constitute a counter-indication.

19 West Forty-sixth Street.

[1] Gaz. des Hôp., September, 1894, p. 947.

Football Casualties and Fatalities.—B. Foote, a student at the Fairfield Seminary, near Little Falls, N. Y., became violently insane a week ago because of injuries received in a football game in which he played centre rush. He rushed around the dormitory all Sunday night in his football suit, and was only secured by a ruse at daybreak. He was then taken to the Utica Insane Asylum, where he is now confined. Daniel McTiernan, fourteen years of age, who played at Worcester on Saturday, December 8th, in a school game, was fallen on in a rush, and was so injured that he died during the night. At Shreve, O., on December 8th, Walter Blackburn, nineteen years of age, received injuries in a football game which caused his death. While "interfering" with another player, Blackburn was thrown heavily to the ground and five or six of the players fell on him. When he was extricated he was paralyzed from the neck down, and a surgical examination disclosed the fact that the spinal column had been fractured.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE REPORT OF THE SURGEON-GENERAL OF THE NAVY.

THE report of Surgeon-General Tryon for the year just past contains one item of more general interest than such documents usually do, namely, the treatment of pneumonia. During the year there were thirty-three cases of acute pneumonia admitted to the hospital in this city, and of that number thirty-one recovered. This unusually low mortality-rate is naturally regarded as a result of the method of treatment adopted. This method consisted in the hypodermic injection of one-thirtieth to one-twenty-fifth grain of sulphate of strychnine every three or four hours, together with a very free use of alcoholic stimulants. The health of the Navy in general was excellent. The remarkable immunity of the officers and men on board the ships in the harbor of Rio de Janeiro, during the yellow-fever epidemic there a year ago, is referred to with a pardonable show of satisfaction. There was but one case of yellow fever on an American man-of-war out of a total complement of 1,762, and this case might have been prevented had the sanitary regulations been obeyed. During this time of practically complete immunity on American war-ships, there was disease on board the vessels of every other nation in the harbor, while many merchant vessels lost nearly their entire crews. A circular has been issued calling for reports relating to the sanitary measures employed in the prevention of yellow fever on board war-vessels, and it is hoped that such reliable information will be obtained from the answers to this letter, that the medical department will be able to formulate sanitary rules and regulations on the subject that will be of value as a guide to vessels of the Navy when obliged in future to serve in an infected port. When such general sanitary rules, embracing special precautionary measures against the introduction of yellow fever and cholera or board vessels of war have been formulated, they will be submitted to the authorities with the request that they be made department regulations.

Concerning the Naval Museum of Hygiene, the report states that the exhibits have now all been transferred to the building, formerly the Naval Observatory in Washington, which was recently set apart by the Secretary of the Navy for this purpose. "The interest that has been manifested by the service and by professional and scientific bodies, in the growth and development of a museum identified with the practical study and advancement of sanitary science, is shown by the steady increase in the number of exhibits. By the removal of the museum to commodious and permanent quarters, the object of its organization can now be satisfactorily fulfilled, and opportunities offered for accomplishing good work in the future. One hundred and ten new exhibits were added to the collection during the past year, including the complete and interesting model of the system of disinfection practised at the quarantine station at New Orleans. This model was exhibited at the Columbian Exposition at Chicago, and presented to the Museum by the Louisiana State Board of Health. Thirty specimens of animal parasites, contributed by the Department of Agriculture, have also been received, remounted, and labelled."

The necessity of organizing a hospital corps is insisted upon, for the services which such a corps, well drilled and equipped, could render would be invaluable to the Navy. Such a corps exists in the Army, and its usefulness has been demonstrated time and again. Other navies are introducing it, and much time and thought are there being given to its perfection, and the Surgeon-General therefore urges that some legislative action relating to this subject be taken by Congress at an early date.

Dr. Tryon refers again to the strange oversight in relation to the sick quarters in the new ships. "On board of ten vessels no quarters are designated for the treatment of the sick and wounded; in the case of the Minneapolis the omission was probably due to an oversight, as this vessel was designed on similar lines to her sister ship the Columbia. Subsequent to the examination of the plans of our uncompleted warships, the drawings of the armored cruiser Brooklyn and the battleship Iowa were submitted to the Bureau and, in consultation with the President of the Board of Inspection and Survey, and the Bureau of Construction and Repair, suitable sick quarters were located." In view of the omissions in the past, it is very reasonably suggested that, hereafter, the medical department be consulted as to the location of sick-bays on ships which may hereafter be constructed.

THE MICROBES OF THE EYE.

THE researches of bacteriologists have shown that the conjunctival sac is a famous feeding-ground for microbes of all kinds. A very complete and learned review of the question by Dr. A. Cuénod (*Gazette des Hôpitaux*), shows the present status of the subject and indicates that, in time, all inflammatory conditions of the conjunctiva will be distinguished nosologically by their specific microbes rather than by the vascular reactions. Thus, he shows that the acute catarrhal inflammations are due sometimes to the bacillus of Weeks and, more rarely, to a pneumococcus or streptococcus organism. The purulent conjunctivitis of genital origin is usually due to the gonococcus. Croupous conjunctivitis may be due to the bacillus of Loeffler, but is oftener a mixed infection.

In chronic inflammatory conditions there have been found the trachoma coccus (Koch, Poncet, Michel), the gonococcus, and a microsporon described by Noisewski. In xerosis, the bacillus of pseudo-diphtheria is present. The bacilli of tuberculosis and of lupus also may develop in the conjunctiva.

According to Cuénod, in the healthy conjunctival sac one never finds the microbes characteristic of the three principal forms of acute conjunctival inflammation (blen-

orrhagic, diphtheritic, and contagious catarrhal). Only exceptionally does one meet with staphylococci, streptococci, and pneumococci. The conjunctiva is, therefore, reasonably aseptic in healthy eyes. The constant flow of lachrymal fluid across its surface is believed to have some antiseptic influence.

TYPHOID FEVER AND SOCIETY.

Typhoid fever, like death, is no respecter of persons. A lay journal laments the fact that this very democratic disease has attacked several members of "society" during the past fall, and has thereby interfered sadly with many high social functions. Dr. Samuel Wilks, in a recent address, asserts that typhoid fever seems to need no specially adapted soil, but seizes upon the vigorous and healthy as quickly as upon the weak. This is the general experience, though as age increases some immunity is experienced. Most intelligent persons nowadays know that typhoid is communicated through what we eat—and especially through what we drink. In the houses of the intelligent and of the wealthy, and in many well-conducted hotels, sterile waters are largely provided. Yet the disease continues to affect the rich and poor. This only shows that the watchfulness is not complete enough; it is easy to forget when the enemy is a subtle and invisible one, and one that lurks in dark and unexpected places, as do the germs of enteric fever.

FRIGO-THERAPEUTICS.

French medical science seems unhappy without some sensation. Perhaps the very latest is that which goes under the name of "frigo-therapeutics." Accounts of it have been telegraphed to our daily papers. Professor Pictet, we are told, recently explained the new method before the Academy of Medicine. He began the development of his new treatment "by experimenting on dogs, and found that when they were plunged into a bath at low temperature and were kept there for some time, they became ravenously hungry. Being himself a sufferer from stomach disease, he had forgotten what it was to have an appetite. So he descended into the refrigerating tank at a temperature many degrees below zero. He wrapped a thick pelisse and other warm clothes about him, but after four minutes he began to feel hungry. At the end of eight minutes he climbed out of the tank with a painfully keen appetite. Many such experiments were made. All meals taken after a short stay in the refrigerator agreed with him. He found that his dyspepsia was cured after the tenth descent."

This account has a very up-to date flavor about it. The idea of curing dyspepsia by making the patient sit in a cold tank is certainly original, but it will, we fear, apply only in carefully selected cases, and the freedom from dyspepsia may be accompanied with colds, coughs, and rheumatism.

And who knows but that sitting in a hot tank might not be still more effective. Dr. Ashmead describes, in the *University Medical Magazine*, the hot-tank treatment of the Japanese, which there seems to be very popular. He says that "In Bungo, Japan, near a town of a thousand homes and five thousand inhabitants, on the coast of Kiushiu, at the foot of an old volcano, there is a warm-spring watering-place much frequented by poor people. They crowd there between the barley harvest and the June rice planting. Eighty-two springs belong to the place. A peculiar way of taking this treatment is the sand-bath, and this is the manner of it: Some of the springs, all of them hot, are so near the beach that they are covered by the full tide. When the waters recede, basins are dug in the sand heated by these, and frequenting patients bury themselves in these holes up to the neck. Those who use the sand-baths usually remain for several hours in them, umbrellas being held over their heads to protect them against the sun."

It is going to take a good deal of skill to determine whether the cold tank or the hot sand is the better way to cure chronic invalidism. In attempting to make a choice between the two it may be safest to follow the habitual rule when supping with the Sheolistic gentleman who blows hot and cold in the same breath, and use a long spoon.

News of the Week.

Spurious Antitoxin. — It is reported that there is a spurious antitoxin in the market. The Health Department has very properly and promptly determined to institute proceedings against such as can be proven to be offenders.

Appointments of Deputy Coroners.—Dr. Emil W. Hoeber, Coroner-elect, has appointed Dr. John B. Huber Deputy-coroner, with the very commendable view of utilizing autopsical material for pathological study. The choice was made after consultation with several leading physicians. Dr. W. O'Meagher, also Coroner-elect, has appointed, with the same ends in view, Professor James E. Kelly, M.D., well known as a skilful surgeon, a thorough anatomist, and an accomplished pathologist.

Errata in Dr. Cleaves's Article.—On page 718, first column, eighteen lines from the bottom: "There was a rise in the temperature of from 1 to 8 degrees," should read, "of from .1 to .8 degree."

The Death of Dr. Stuart Douglas.—At the seventieth stated meeting of the Society of Alumni of Bellevue Hospital, held at the Hotel Brunswick, Wednesday, December 5, 1894, the following resolution was adopted:

Whereas, In the death of Dr. Stuart Douglas, the Society of Alumni of Bellevue Hospital has lost one of its most esteemed members and friends, whose ability had already brought distinction and gave promise of a brilliant future; therefore, be it

Resolved, That this Society extend to the members of his family their most heartfelt sympathy. And be it further resolved, that this resolution be spread upon the minutes of the Society, and a copy sent to his family and the medical press of New York and Virginia. Matthew D. Field, William E. Studdeford, John M. Brooke, *Committee on Resolutions.*

Examinations for the Public Services.—An esteemed correspondent writes that an item appearing in a recent issue concerning the proportion of successful candidates for the medical staff of the Army and Navy, might convey a wrong impression as to the difficulties of the ex-

aminations. The item was gleaned from the reports of the Surgeon-general of the two services, and of course did not make mention of the previous training of the candidates. Our correspondent states that a large majority of those who succeeded in passing the examinations had studied under teachers who make a specialty of preparing candidates for such examinations; while most of those who failed had made no such special study. The examinations are rigid but fair, and no young graduate who studies faithfully under competent instructors need despair of success.

Edward Henry Van Winkle, M.D., died of paralysis of the heart, at 25 West Ninth Street, last week, aged seventy-nine. Dr. Van Winkle was born in the town of Aquackanorick, N. J. He was graduated from the College of Physicians and Surgeons, and began to practise in 1838. Three years ago he retired.

Opening of a New Hospital for Incurables.—Seton Hospital, at Spuyten Duyvil, was formally opened on December 4th. Twenty years ago Sister Irene, Mother Superior of the New York Foundling Asylum in Sixty-eighth Street, began to raise funds for a hospital for those afflicted with incurable diseases. She is an old woman now, and was unable to attend the opening of the institution, but she had the satisfaction of knowing that her purpose had been accomplished.

The hospital overlooks the Hudson, and is surrounded by spacious grounds. It is named for Mother Seton, the founder of the order of the Sisters of Charity in the United States. The building is of brick, four stories high, 250 feet front, and 200 feet deep. To the east and west there are two wings, each 90 feet deep. The building was begun about three years ago and cost $330,000. All expenses have been met and the hospital opens entirely free from debt. It will be in charge of Sister Mary Dolores, and a board of managers yet to be appointed. The chief of the medical staff will be Dr. J. West Roosevelt.

Tablet to the Memory of Dr. Wells.—A tablet of bronze erected to the memory of Dr. Horace Wells, of Hartford, Conn., was unveiled on December 11th, without ceremony, owing to the inclemency of the weather. It commemorates the fiftieth anniversary of the discovery by Dr. Horace Wells of nitrous oxide gas as an anæsthetic. On December 11, 1844, the late Dr. John M. Riggs, at Dr. Wells's request, administered nitrous oxide gas to him and extracted a tooth without pain. The tablet bears a medallion portrait of Dr. Wells and the inscription:

"To the memory of Horace Wells, the dentist, who upon this spot, December 11, 1844, submitted to a surgical operation, discovered, demonstrated, and proclaimed the blessings of anæsthesia."

Two hundred and fifty dentists in this country contributed to the fund for the tablet. The Connecticut State Dental Society gave a banquet in honor of the event.

A Popular Subscription to Supply the Poor with Diphtheria Antitoxin has been started by the New York *Herald*, which paper subscribes $1,000.

The Elmira Reformatory.—The commission appointed by Governor Flower to investigate the Reformatory has made a majority report in which it is said, as a conclusion: The Elmira Reformatory is not a perfect institution in all respects, as this report indicates. There is room for improvement in some matters that could not properly be covered in this report. As it is organized and conducted, however, it is a model reformatory. Its results have been extraordinary as regards its success in the reformation of criminals. It probably stands pre-eminent among the reformatories of the world. These results are due to the unselfish devotion of the managers, and the extraordinary qualities of Mr. Brockway as an organizer and executive officer, added to his intimate knowledge of the criminal character. The managers are fully justified in the confidence they have reposed in their General Superintendent. Whatever defects we have noticed, as brought out by this investigation, have in no way involved hardship or injustice to any inmate, as far as has been shown by the evidence, except in the single case of Aaron. This case is one among more than 6,000 convicts who have been received at the institution since its establishment. A very few changes, not difficult to effect, and involving but little additional cost, would render this an ideal institution of the kind.

1. The number of inmates should never exceed the number of cells, and the number of cells should not be increased. Doubling up has evident evils to which it is unnecessary to refer. Intelligent and efficient treatment of inmates requires a close study of individual characteristics. We believe that the work of the Reformatory could be better done with a population of 600 than with 1,200.

2. The Reformatory physician should have an assistant, who should reside in the Reformatory, and the medical care and supervision of inmates should be conducted on the lines indicated in the body of this report.

3. Should the administration of corporal punishment be restored, no blows should be given except on the buttocks, except in self-defence or in instances of violent resistance. Very respectfully submitted.

AUSTIN FLINT, ISRAEL T. DEYO,
Commissioners.

A minority report by Judge Learned thinks that punishment was inflicted too often, and criticises the laws regarding the institution. Governor Flower dismisses the charges. On the whole, the general management of the institution has been amply justified.

Progress of Serum Therapy.—A Sero-therapeutic Institute for the east of France is in process of formation. At Amsterdam serum is being prepared by Professor Forster. Various journals, both political and medical, are collecting subscriptions, and considerable sums have already been obtained. In Spain the preparation of serum has been begun in the Municipal Laboratory of Barcelona, under the direction of Dr. Jaime Ferrán. Two horses are being immunized by Drs. Robert amd Llorente. Dr. F. Spät writes to the *Münchener medicinische Wochenschrift* to point out that the germ of "sero-therapy" is to be found in a passage of Pliny which has been overlooked by Sprengel, Haeser, and other historians of medicine. It is well known that Mithridates, the famous King of Pontus (B.C. 124–64) was believed to have made himself proof against poisons, apparently by a system of graduated dosage till tolerance was established. As the

result of his experiments on himself, he is said to have hit upon a kind of universal antidote which was famous in the ancient world under the name of *mithridaticum*. One ingredient in this antidote seems to have been the blood of the Pontic duck, which the King added because that fowl lived on poison (*sanguinem anatum Ponticorum antidotis miscere quoniam venenum viverent.* Pliny, Natural History, Lib. xxv., S. iii., Ed. Harduin, p. 210). In the *Riforma Medica* of October 30th, Dr. Ricardo Agostini calls attention to some experiments on the preventive and curative inoculation of the diphtheria poison, made some thirty five years ago by Dr. Giuseppe Babola, of Santa Margherita di Montagnana. In 1859 that practitioner referred, in the *Gazzetta Medica Italiana*, to two such experiments which might serve as the basis of future researches. He states that he inoculated two healthy girls with membrane taken from the throat of a sister who was seriously ill with the disease, the result being a very mild attack in each case. Some years later he returns to the subject in the same journal, (March 7, 1863). In the same periodical for February 13, 1864, he reported a further series of experiments, for which he claimed fairly successful results, especially as regards the prophylactic effect of the inoculation. His method was to make two or three punctures on the arm with the point of a lancet that had been dipped in diphtheria products removed from a patient's throat with forceps. Babola compares his method with vaccination and the inoculation of syphilis, and attempts to explain its mode of action.

The Index Medicus is to be discontinued.

A Medical Passe-Partout.—The head of the Berlin police has decided on issuing to practitioners in that city what may be translated as a "crowd threader," on the presentation of which all constables will be bound to assist the possessor in making his way through crowds. The privilege is to be applicable to foot doctors only; the carriage-keeping section of the fraternity must make their way by their own unaided efforts, or rather by those of their coachmen.

The Profits of an Amateur Sport.—The expenses of one football team (Yale) for one year (1892) were $15,284.62 and the gross receipts $31,300.71, leaving the net receipts $16,016.09. The net receipts last year were for the same team, $22,914. In 1892 the team paid for drugs, surgical supplies, medical services, and rubbers, $857.89.

St. Francis Hospital, New York.—Dr. John Dorning has been appointed Visiting Physician to the St. Francis Hospital.

Exportation of Live Cattle to Germany.—The German Ambassador at Washington has notified the Secretary of State that, in consequence of the introduction of Texas fever into Germany by means of two shipments from New York, the importation of fresh beef and cattle from the United States to Germany will soon be prohibited. No such disease is reported among recent shipments, however, and it is believed that that is only an excuse, and that the real reason is to retaliate against this country on account of the discrimination against German beet-sugar in the new tariff law.

Obituary.

JOHN MILLS BROWNE, M.D.,

EX-SURGEON-GENERAL UNITED STATES NAVY.

John Mills Browne, Ex-Surgeon General, United States Navy, born in Hinsdale, N. H., May 10, 1831. Graduated at the Medical Department of Harvard University in March, 1852. Appointed from New Hampshire, March 25, 1853; entered the service as Assistant-Surgeon and performed first duty on board the storeship Warren, Lieutenant Commanding Fabius Stanly, at Saucelito, opposite San Francisco; in September, 1854, the Warren, Lieutenant Commanding D. McDougall, proceeded to Mare Island and became the temporary residence of Commander D. G. Farragut, the inaugurator and first commander of the Navy Yard; Medical Officer of the Navy Yard until May 10, 1855; then duty on board Coast-survey steamer Active, Lieutenant Commanding, James Alden; attached to Active until November, 1857; Active employed in surveying the coast and harbors of California, Oregon, and Washington Territories in the winter of 1855–56, with the steamer Massachusetts and the sloop Decatur; Passed Assistant Surgeon, May 12, 1858; brig, Dolphin, Lieutenant Commanding, John N. Maffit, June 1, 1858, Home Squadron off Cape Verde, Cuba, Dolphin captured the brig Echo with over three hundred slaves destined for the Cuban market; Echo sent to Charleston, S. C., subsequently the surviving negroes were taken to Liberia in the frigate Nisagra; October 1, 1858, steamer Atlanta, Commander D. B. Ridgly, Paraguay expedition; December 25, 1858, Hospital Norfolk, Surgeon Ninian Pinkney; May 9, 1859, sloop Constellation, Flag Officer William Inman, Fleet Surgeon Thomas D. Smith, Flag Ship of African Squadron; visited Madeira, Cape de Verde Islands, St. Helena, Liberia, St. Paul de Loanda and other ports and islands along the west coast of Africa; September 25, 1860, at night off Congo River, Constellation captured the bark Cora with seven hundred and five slaves, which was sent to Liberia; commissioned as Surgeon June 19, 1861; December 23, 1861, steam sloop Kearsarge, Commander Charles W. Pickering, special duty coast of Europe; visited Cadiz, Algesiras, Gibraltar, Tangier, Ferrol, Brest, Cherbourg, Boulogne sur-Mer, Calais, Ostend, Flushing, London, Margate, Ramsgate, Deal, Dover, Folkstone, Hastings, Queenstown, Azores, Madeira, Teneriffe; off Cherbourg, June 19, 1864, Kearsarge, commander John A. Winslow, after an engagement of one hour and two minutes, destroyed the rebel steamer Alabama; Kearsarge left Europe in August, 1864, for the Azores, and from thence proceeded to Fernando de Noroha and Las Rocas, off Brazil, in search of the rebel steamer Florida, returned to Barbadoes, thence to St. Thomas, and arrived at Boston November 9, 1864; December 23, 1864, temporary duty Navy Yard, New York; April 29, 1865, Navy Yard, Mare Island; special duty to superintend the erection of the Naval Hospital at Mare Island; duty in charge of the hospital at Mare Island, 1870–71; Fleet Surgeon, Pacific Fleet, 1871–72. Commissioned as Medical Inspector, December 1, 1871; Navy Yard and Naval Hospital, Mare Island, 1873–74; Fleet Surgeon, North Pacific Station, 1874–76; Naval Hospital, Mare Island, 1876–80. Commissioned as Medical Director, October 6, 1878; President of Medical Examining Board, Washington, D. C., 1880–82; Member of Board of Visitors, Naval Academy, Annapolis, Md., 1881; Naval Representative at the International Medical Congress, London, Eng., 1881; duty in charge of Museum of Hygiene, 1882–85; duty on Board of Naval Regulations, 1882; Member of National Board of Health, 1883; Naval Representative at International Medical Congress, Copenhagen, 1884; Member of Retiring Board, 1885–88. Chief of Bureau of Medicine and Surgery, with title of Surgeon General of the Navy, from April 2, 1888, until date of retirement, May 10, 1893.

Reviews and Notices of Books.

THE MEDICAL RECORD VISITING LIST, OR PHYSICIANS' DIARY FOR 1895. 16mo. New York: William Wood & Co.

THE present edition of this very popular Visiting List has been revised to increase the amount of matter calculated to be useful in emergencies. The most important change is in the list of remedies and their maximum doses in both apothecaries' and decimal systems, and the indication of such as are official in the United States of America. The items of essential information which really meet the pressing emergencies of the bedside are so well arranged for ready reference, under appropriate headings, as to occupy but a small amount of space, leaving ample room for the simple and effective record of daily visits, weekly charges, ledger posting, and memoranda. It still retains its convenient pocket size, with suitable flap-cover and pencil-carrier.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By H. C. WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. Philadelphia: J. B. Lippincott Company. 1894.

THIS is the ninth edition of Professor Wood's well-known treatise on therapeutics, "a work on medical agencies, drugs, and poisons, with especial reference to the relations between physiology and clinical medicine." There is little that can be said of a standard work, such as this has become, whose popularity is attested by the call for a new edition every two or three years. The present edition has been adapted to the new Pharmacopœia of the United States, all of the new remedies therein admitted, as well as a number of unofficinal drugs, being carefully and adequately discussed. To the few who do not know the work, we can recommend it as one that shares, with Ringer's Therapeutics and a few other classical treatises, the honor of being an indispensable requisite to the therapeutic division of every medical library.

SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY: An Introduction to the Study of Obstetrics and Gynecology. For Medical Students and Practitioners. With a Glossary of Embryological Terms. By WALTER PORTER MANTON, M.D., Professor of Clinical Gynecology and Lecturer on Obstetrics in the Detroit College of Medicine. 12mo, pp. 126. Philadelphia: The F. A. Davis Co.

THOUGH being, in accordance with its title, only a synoptical outline of the facts of embryology, this little book will be found convenient and useful for the general student. The essentials of the subject are set forth clearly, a useful chapter gives hints as to practical methods of study, and a satisfactory glossary is appended. Interleaved blanks add to the convenience of the book for laboratory use.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY, AND THERAPEUTICS. By W. HALE WHITE, M.D., F.R.C.P. Edited by REYNOLD W. WILCOX, M.A., M.D., LL.D. Second American Edition, thoroughly revised. Philadelphia: P. Blakiston, Son & Co. 1895.

THIS book is presented to the profession entirely remodelled according to the last edition of the Pharmacopœia. It has been especially prepared to adapt itself to the wants of American medical men. It is concise, and still gives clearly all the points anyone cares to know on the newest drugs, their doses, method of application, in short, just what each physician ought to know.

Especially interesting we note the chapters pertaining to prescription writing, doses of drugs, incompatibles, etc.

Besides the carefully written chapters on action of drugs on various organs, we note: 1, Pharmacopœial inorganic materia medica; 2, pharmacopœial organic vegetable materia medica; 3, pharmacopœial animal materia medica. Remedies officinal in B. P.

A great many new drugs have been added to this new edition, *e.g.*, Borium strontium preparations, hydrogen dioxide, etc. We also note additions of various organic drugs, strophanthus, rhamnus, purshiano-aspidosperma, and many others.

The authors are to be congratulated on the rapid appearance of this second edition, and this book well deserves a place in the library of every practitioner.

A PRACTICAL SYSTEM OF STUDYING THE GERMAN LANGUAGE, FOR PHYSICIANS AND MEDICAL STUDENTS. For Self-instruction. By ALBERT PICK, M.D. Newtonville, Mass.: Pick & Tanner. 1893–94.

WE have previously noticed the first six parts of this very practical work for self-instruction in medical German, and need only add that the complete work fully justifies the opinion then expressed, that the method offers to the diligent student a less difficult means than most other self-instructors of acquiring the amount of German necessary for reading books or journal articles written in that language. There is no easy road to German, but this work appears to open up a shorter path than any we have yet seen to the acquirement of that smattering of the language which is all that most of us have the time or the ambition to gain. The separate parts are convenient for carrying in the pocket and studying in the carriage, the street-car, or during long vigils of the night.

A PRACTICAL TREATISE ON NERVOUS EXHAUSTION (NEURASTHENIA). Its Symptoms, Nature, Sequences, Treatment. By GEORGE M. BEARD, A.M., M.D. Edited, with notes and additions, by A. D. ROCKWELL, A.M., M.D. Third edition, enlarged. New York: E. B. Treat. 1894.

THIS well-known treatise, for many years a classic, appears on later reading as interesting and original as when first published. Accepted throughout the thoughtful world as conclusive, the ideas that it embodies are still too little a part of general medical knowledge. The physician who is endeavoring to practise medicine without them is earnestly advised to secure the new edition of this book, and increase his power of usefulness by familiarity with the symptoms and treatment of a very common and distressing disorder. The original text is made still more valuable by Dr. A. D. Rockwell's careful notes and additions, which bring the work well up to date, and offer many practical suggestions.

WHEN ALL THE WOODS ARE GREEN. A Novel. By S. WEIR MITCHELL, M.D., LL.D., Harvard. New York: The Century Co. 1894.

NOT long since a French journal published an elaborate article on medical novelists, the writer of which, with the strange national egotism of most of his race, had seemed to think it needless to mention, if indeed he had ever heard of, any but Frenchmen. He discovered two whose art consisted in weaving into a romance some of the cases of sexual psychopathy collected by v. Krafft-Ebing and others. It is a pity the writer had not seen this delightful story of the Canadian forest, with its incidents of salmon-fishing and love making, for it would have shown him that medical novelists need not treat of medical subjects, but can excel in the field of pure literature without calling in forbidden topics to give their tales a spice. We believe that Dr. Mitchell's fame will rest upon his work as a physician rather than on what he has done in the field of poetry and romance, yet that he well deserves the high rank which he already holds as a poet and novelist no one can gainsay. He has the talent, at least, of giving us living men and women in his tales, and he holds the interest of the reader to the end.

Society Reports.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twentieth Annual Meeting, held at Hot Springs, Ark., November 20, 21, 22, and 23, 1894.

FIRST DAY, TUESDAY, NOVEMBER 20TH.

THE Association was called to order by the Chairman of the Committee of Arrangements, Dr. Thomas E. Holland, of Hot Springs. Prayer was offered by Rev. Joseph A. Dickson. An address of welcome on behalf of the State was delivered by Governor George W. Fishback. Hon. W. H. Martin, of Hot Springs, followed with an address of welcome on behalf of the citizens.

The Uses of Medical Societies.—DR. X. C. SCOTT, of Cleveland, O., delivered the presidential address. All medical associations, he said, should be carried on for the purpose of elevating the profession and producing a beneficial influence upon its members, and also that they may meet face to face and thus learn to know each other personally and better. They should elevate personal character, afford protection to professional interests, and advance personal attainments. To be successful the financial affairs of the Association should be conducted with the same careful and rigid supervision that pertains to any private business. He thought the idea of reading all papers before the general body would afford larger audiences, create better and more interesting discussions, and consequently result in greater good to the majority of the members. Since the last meeting some of the States have passed excellent laws governing the practice of medicine, surgery, and midwifery, but he was sorry to note that other States failed in the passage of similar laws.

Some Observations on the Rights and Duties of Medical Witnesses.—HON. W. S. KERR, of Mansfield, O., read a paper with this title. The weight of expert medical evidence depends upon two qualities—first, the skill, learning, and experience of the witness, and, second, his honesty. The latter quality can be and should be alike in all. The former, in the nature of things, must vary and differ in degrees almost infinite in number. The evidence of an expert should be compensated for, commensurate with its value. In criminal cases the amount should be fixed by the court, in civil by agreement between the expert and the party calling him. The medical expert should never have his opinions for sale.

Bone and Joint Tuberculosis, the Future Field of Litigation against Railways.—This paper was read by DR. EMORY LANPHEAR, of St. Louis, Mo. The author submitted the following conclusions: 1. Most chronic joint affections are tuberculous; "scrofula" has no existence, being but an attenuated tuberculosis. 2. The family history is unimportant, as tuberculosis is always acquired, never inherited. The presence of tuberculosis in the family simply gives a better opportunity for infection. 3. Infection may occur very early in life, but the germs may lie dormant for many years in the lymph-glands, and local tuberculosis develop only after an accident. 4. An injury to a bone or joint must be slight in order to cause tuberculosis. If severe, the resultant inflammation is not favorable to the proliferation of the bacilli. 5. An injury alone can never produce tuberculosis. The bacillus must always be present in the system, or introduced into a wound at the site of injury. 6. *Per contra*, bone or joint tuberculosis would never develop without a slight local injury. 7. If after a railroad accident, falls, wrenches, or other accidents may have possibly occurred, the local trouble may be due to them as well as to the railway injury. There must be a direct sequence to attribute the disease to the local injury.

Enlargement of the Heart without Valvular Disease.—DR. ROBERT H. BABCOCK, of Chicago, read a paper on this subject. The author said that idiopathic enlargement of the heart, as Fraentzel designates it, affecting primarily the left ventricle, is due primarily to prolonged high arterial tension, and this increase of arterial tension may be secondary to a cirrhosis of the kidneys, chronic arterio-sclerosis, congenital narrowing of the arterial system, and some obscure condition probably dependent upon defective assimilation and elimination, which is not fully understood, connected probably with the circulation of toxines in the blood. Prolonged high arterial tension he considered the chief factor concerned in the production of this form of enlargement of the heart. The enlargement may involve either the right or the left side of the heart, or both. Prolonged high arterial tension, when independent of organic disease of the kidneys or blood-vessels, seems to be due to what the Germans call *luxus consumption*. It is observed in individuals who belong to the better class, who are more or less sedentary in occupation, who are hearty feeders, and oftentimes great diners-out. The treatment was divided into, first, the treatment of the stage of loss of compensation, in which the heart is at first broken down in its resistance. Rest is the important factor, along with cardiac stimulants and the administration of remedies calculated to decrease the high arterial tension. Digitalis, strophanthus, and their congeners are not suitable to the cases in the stage of loss of compensation, since the effect of digitalis, and to a less degree strophanthus, is to increase the resistance within the arterial system, and thereby increase the strain, already too much for the impaired right ventricle. It is preferable to administer an arterial stimulant rather than one of the so called cardiac tonics. Under the effect of rest and cardiac stimulants improvement in the condition is generally manifested speedily.

The author then referred to the Schott method of treating these cases, which consists of baths and gymnastic exercises.

Malaria a Water-borne Disease, was the title of a paper read by Dr. W. H. DALY, of Pittsburg. The author said, in summing up the evidence in a given case of so-called malaria, it is important to remember that the water-vehicles of malaria may include contaminated land water, taken into the stomach on the stalks of celery or on the leaves of lettuce, or it may find its vehicle in the rinsing of milk cans with malaria water, or in the adulteration of milk with contaminated water containing the Laveran germ; the cistern water stored under the earth may be easily contaminated by the earth water containing the germ, if the cistern itself is cracked or otherwise inefficient. The author defined his position on this question by quoting from an article published in the MEDICAL RECORD of September 15, 1894.

The Influence of Early Treatment on the Late Manifestations of Syphilis.—DR. A. RAVOGLI, of Cincinnati, said that syphilis must be seriously treated. Mercury is the true antitoxin for this disease. It is necessary in instituting treatment, to take under consideration the general condition of the patient, his habits, his general health, his surroundings, etc., which have great influence in the toleration of the medicine. The author believes that early, well-directed treatment of syphilis will prevent tertiary symptoms. Mercury can be administered either by the stomach, by subcutaneous injections, by inunctions, or by baths. The selection of the method should rest on the good judgment of the physician.

SECOND DAY, WEDNESDAY, NOVEMBER 21ST.

Intestinal Indigestion. — DR. A. P. BUCHMAN, of Fort Wayne, Ind., read a paper on this subject. He said that intestinal putrefaction is, in its incipient stages, not due to a pathological condition of the tube below the stomach and duodenum, but is dependent solely upon errors of gastric and pyloric digestive processes. Excess of food ingested will universally induce such putrefactive processes, which in infancy and childhood are exhibited in the bowel diseases of early life, and can

with reasonable certainty be differentiated from deflections by other causes, by the odor and appearance of the dejecta. The toxic elements generated in this process, sooner or later, render glandular and cell environments of the intestinal tube unhealthful. The air patients breathe, the water they drink, and the food they eat, are charged with a miasm which absolutely forbids a healthy reaction, hence most complicated and decidedly serious pathological conditions arise. Another chief source of intestinal indigestion arises from the inability of the tube below the pylorus to successfully cope with the relatively enormous quantities of carbohydrates and hydrocarbons that are daily and continually ingested. The second and third stages of intestinal indigestion were then dwelt upon. Colon baths properly medicated are very useful in the general treatment and care of patients suffering with intestinal indigestion.

Abortion of Typhoid Fever.—Dr. J. E. Woodbridge, of Youngstown, O., read a paper in which he gave his experience during the past year in support of his theory.

The Importance of Urinalysis in Diagnosis.—Dr. A. B. Walker, of Canton, O., held that no opinion of a case of any importance should be given without there having been made a careful examination of the urine. He believed many a case of Bright's disease might be prevented, if, when the first symptoms of the disease manifest themselves, a careful examination of the urine were made, and the proper treatment and diet prescribed. An interesting case was cited in point.

Physicians' Prescriptions.—Dr. Starling Loving, of Columbus, O., read a paper with this title, in which he alluded to the difficulties which young practitioners encounter when they essay their first prescription. He said we seldom read of mishaps from defectively written prescriptions in England, Germany, or France, where prescription writing is more extensively and systematically taught. Sufficient attention is not always given in this country to compatibilities, chemical and therapeutic, to solubilities, the influences of light, temperature, air, and of other circumstances affecting the condition of drugs and chemicals. Many failures in treatment and many accidents, some serious in character, result from carelessness or want of accuracy in the directions given to nurses and patients for the administration of medicines after they have been brought ready for use.

Poisons.—Dr. William F. Barclay, of Pittsburg, followed with a paper on toxics. Toxics enter the circulation, and their action on the normal cells produces toxines, and the multiplication of these products brings on pathological conditions. Nothing is more easily demonstrated than that the emunctories throw off toxics. We observe at once, upon the entrance of a toxic into the circulation, that all the functions of the body are impaired to a greater or less degree, and the vital forces are at once disturbed or arrested. Primarily the circulation, and secondarily the nervous system, are impaired, and shock is superinduced. In the stage of shock nature seems intent upon relieving herself of all effete matter by the discharge of the contents of each viscus of the body. All such efforts should be assisted by artificial means.

Quinine in the Treatment of Chorea.—Drs. Frank R. Fry, and M. A. Bliss, of St. Louis, briefly reviewed Professor H. C. Wood's theory that chorea is due to disturbances in the spinal inhibitory apparatus, and the suggestion derived from it, that inasmuch as quinine had been found physiologically to stimulate spinal inhibition in animals, the drug be given to patients affected with chorea. The writers recited a number of their own cases from clinic and private practice, in the treatment of which they have been using quinine, and their results confirm those of Dr. Wood and others. They called attention to the fact that they have not used as large doses as others, yet had very satisfactory results. They suggest that this drug has a decided value in the treatment of certain infectious diseases, in which class, according to the opinion of some authorities, chorea belongs.

Reflex Irritation as a Cause of Disease.—Dr. Edwin Walker, of Evansville, Ind., said that no error in modern times has had such a tenacious hold on the professional mind as that of reflex irritation as a cause of nervous disease. The speaker said that he had never seen a case of epilepsy, insanity, catalepsy, hysteria, or grave neurasthenia, nor any organic disease of the nervous system cured, or even permanently benefited, by any operation on the genital tract, done either by himself or anyone else.

Third Day, Thursday, November 22d.

The Mental Symptoms of Cerebral Syphilis.—Dr. Frank P. Norbury, of Jacksonville, Ill., read a paper with this title, of which the following were the conclusions: 1. Somnambulism and allied states, lapses of intelligent conceptions with associated loss of memory, are mental symptoms of cerebral syphilis. 2. Sudden somnolence with ocular spasm or paralysis points to syphilis; when preceded with headache and monoplegia, is almost pathognomonic. Headache, quasi-periodical, as defined by Gray, with marked insomnia, suddenly ceasing and followed by psychical disturbance is due to syphilis. 3. Melancholia or mania, when following periodical headaches, insomnia, and somnolence (*a*) with ocular spasm or other form of monoplegia or heterogeneous paralysis, is due to syphilis. (*b*) Pseudo-paranoia. By this he means cases presenting all symptoms of paranoia, systematized delusions depending on hallucinations of sight, hearing, taste, or smell, with slight impairment of general mental functions, is due to syphilis, as we know that syphilis causes isolated local losses of power, and it is noteworthy when the special senses are involved that mental derangement usually results. (*c*) Pseudo-paresis, characterized by fibrillary tremor of tongue, indistinct speech (partial or complete aphasia), uncertain and trembling gait, with delusions of grandeur and occasional outbursts of maniacal excitement, pupillary involvement, all characteristic symptoms of paresis, but which yield readily to antisyphilitic treatment, we can say it was due to syphilis. 4. Class four have had epileptiform and apoplectiform attacks. We find cases in which treatment was undertaken too late. The symptoms are those of terminal dementia, only occurring in patients of previous sound mental condition and with no special hereditary history.

The Surgical Treatment of Injuries of the Head.—Dr. Charles B. Parker, of Cleveland, O., contributed a paper on this subject, of which the following were the conclusions: 1. In a case of doubt as to the character of a head injury, explore by incision, if necessary. 2. In the case of wounds, especially the smaller and punctured, enlarge them for exploration and cleansing. 3. In all cases of fracture, depressed or fissured, operate, elevating the depression and exploring the fissure for a depression of the inner table, which so often occurs. 4. Leave principal fragments of bone after elevation, if surgically clean, even if entirely detached from the dura mater and pericranium, thus averting cerebral hernia, vertigo, and other cerebral disturbances. 5. All these operative measures should be conducted under the most rigid aseptic and antiseptic measures.

Traumatic Lesions of Cranium and Brain.—Dr. George N. Lowe, of Randall, Kan., reported four interesting cases. The first case was one of depressed comminuted fracture of the right parietal bone at the junction of the temporal bone, caused by the kick of a horse. There was also a contused lacerated wound of all the soft tissues along the entire ramus of the left inferior maxillary. In this case the author trephined and elevated the depressed comminuted bone fragments. Recovery.

Castration for Hypertrophied Prostate.—Dr. B. Merrill Ricketts, of Cincinnati, reported a case of castration for hypertrophied prostate. The arteries were twisted, the wound closed, and integument coapted with a continuous silkworm-gut suture. The patient rallied

well from the chloroform and suffered no inconvenience or pain thereafter. The wound was examined on the fourth day and primary union was found to have taken place. The patient left the hospital at the end of the sixth day. On the second day after the operation he said that he could urinate with greater ease, and that the pain was slight; that he could sleep four hours at a time during the night, whereas formerly he had been getting up once every hour.

Tumor Albus of the Knee-joint.—This paper was read by Dr. William E. Wirt, of Cleveland, O. The author classified the treatment under the two headings of constitutional and local measures, and the local under the subdivisions of conservative and operative treatment. The author first considered constitutional treatment, and then the local treatment, which he divided into the conservative and operative. The conservative measures to be carried out in the treatment of this affection are counter-irritation and local applications, fixation, protection, rest, and correction of deformity. These were considered under their respective heads.

Resection of the Knee for Separation of the Lower Epiphysis of the Femur.—Dr. A. H. Meisenbach, of St. Louis, said separation of the epiphysis is a condition that may occur either on account of trauma or disease. There seems to be a difference of opinion by writers as to the frequency of its occurrence, especially as the result of trauma. Traumatic separation of the lower end of the femur occurs in about from one-fifth to one-third of all the reported cases, and in the majority of instances previous to the sixteenth year, seldom later. The forces that are necessary to produce this separation are various. Thus during childbirth traction may produce it. Volkmann states that he has produced it when the hip is diseased, when making rotation in seeking for crepitation, or extension in the application of plaster-of-Paris dressings.

Other forces are indirect external violence, usually of a twisting character, or lateral, or at right angles to the axis of the limb. The readiness with which the dislocation of the separated diaphysis into the popliteal space occurs can be explained: 1, on account of the anatomical structures of the surrounding parts; 2, the force and position of the patient, the popliteal space being in the direction of least resistance, while on the anterior aspect we have the quadriceps tendon, the patella, and the ligamentum patellæ. The occurrence of pathological separation of the epiphyses is regarded by the latest writers on surgical pathology and diseases of the bones, as a not infrequent accident in diseases of the bones and joints. It is noted in osteomyelitis of the long bones.

Hydrocele —Dr. W. C. Weber, of Cleveland, O., read a paper on this subject. He first dwelt upon the anatomy of the testis, and then alluded to congenital and acquired hydrocele. The congenital form results from an imperfect closure between the cavities of the tunica vaginalis and the peritoneum. Acquired hydrocele occurs in children, and most frequently in early adult life. Its cause is not always known, though traumatism is probably the most constant factor in its production. In a hydrocele of small or ordinary size, the date of its origin being recent, an evacuation by means of a small trocar and cannula may be all that is necessary to accomplish a cure. Should this fail in its purpose, it becomes necessary to adopt measures whereby sufficient irritation of the tunica vaginalis may be produced to secure inflammatory adhesions of the opposing surfaces. This end is usually attained by the injection of tincture of iodine, alcohol, carbolic acid, perchloride of iron, and other substances into the sac after the removal of its adventitious contents. Among other methods of treatment may be mentioned excision, incision, and the seton. The author reported a case in which he used carbolic acid, which illustrated very nicely what can be done in the way of radical treatment in apparently extreme cases. The result was very satisfactory.

Treatment of Traumatic Cataract Attended with Rapid Swelling of the Lens.—Dr. James M. Ball, of St. Louis, Mo., held that in cases of traumatic cataract with rapid increase of intra ocular tension, an operation should be performed, and it should not be linear extraction, but an extraction made with the Graefe knife, and with the incision located in the cornec-scleral junction. The knife should cut from one-third to twc-fifths of the corneal circumference, according to the extent to which the softening process in the lens has advanced. If glaucomatous symptoms supervene with softening of only a small part of the lens, the corneal incision should be large. If the softening involve the whole of the lens, the incision should be of less extent. The chief merit of the operation lies in the avoidance of the valve which is produced by the linear method. In other words, the author's method permits of free evacuation of all the lenticular substance with the least amount of traumatism. An iridectomy is not made. All débris is removed at once. This cannot be accomplished by the linear method.

Some Observations on Sore Throat Due to Concretions in the Tonsils.—Dr. Lewis C. Cline, of Indianapolis, Ind., read a paper in which he said that every experienced practitioner could recall cases of recurring tonsillitis or sore throat that often developed without any apparent cause, but which were doubtless due to chronic inflammation of the follicles, altered and retained secretions. It was to this class of cases that the essayist invited attention. His remarks dealt more particularly with the cheesy bodies, and not the calculi, which are probably the outgrowth of the long retained cheesy deposits acting as a nidus for the deposit of the more solid materials, as phosphate and carbonate of lime, iron, soda, and potassa, etc. These concretions are doubtless the result of a catarrhal condition of the mucous lining of the follicles, often coupled with a uric acid diathesis. Some writers believe them to be parasitic in origin. They predispose to attacks of quinsy, and in the author's judgment are the cause of the majority of these cases, and they can be permanently cured by carefully searching for and destroying all the crypts and pockets in which these bodies are formed. The author reported several interesting cases, and closed by stating that perverted secretions of the follicles of the tonsils from catarrhal inflammation resulting in cheesy concretions were the cause of more sore throats and quinsy in adults than any or all other causes combined.

Fourth Day, Friday, November 23d.

The Removal of the Auditory Ossicles for the Relief of Chronic Deafness and Other Abnormal Conditions.—Dr. Robert C. Heflebower, of Cincinnati, contributed a paper with this title, of which the following were the conclusions: 1. No bad results attend the excision of the malleus and the incus, but removal of the stapes is not without the most serious danger, both to life and hearing. 2. That the removal of the malleus and incus alone is far preferable to the removal of the stapes. 3. The operation is of extreme service in chronic suppuration in suitable cases, frequently avoiding mastoid and other serious disturbances of an equally serious nature. 4. It should be performed in cases where there is a high perforation, or where the membrana flaccida is perforated, and where the ossicles are necrotic. 5. Tinnitus, headaches of ear origin, and vertigo are relieved. 6. In suitable cases it is invaluable for relieving deafness, whether from chronic suppuration or from chronic catarrh and sclerosis.

Circumcision.—Dr. Bransford Lewis, of St. Louis, Mo., read a paper on this subject in which he detailed a method of performing that operation, for which he claimed many advantages. The operation was done with the assistance of two instruments, a clamp and prepuce tractor, which enabled the operator to carry out the following

steps of procedure: 1. The prepuce is drawn strongly forward, the traction being applied to its inner surface by means of the serrated tractor mentioned. 2. The glans penis being repressed, the curved, fenestrated clamp is applied. 3. With these as a support and guide, ten per cent. cocaine solution is injected between the two layers of foreskin, anterior to the clamp. 4. After effective anæsthesia has been secured, six double length (ten inch) catgut sutures are run clear through the clamp-fenestra and the four layers of foreskin. 5. With strong scissors the latter is cut off at one sweep. 6. Tractor and clamp being removed, the double-length sutures being divided, two additional sutures are placed at the dorsal and frenal sites, previously occupied by the tractor. 7. The vessels are secured and sutures tied all around.

The Treatment and Management of Corporeal Endometritis was the title of a paper read by Dr. William H. Humiston, of Cleveland, O., in which the author said that nine-tenths of all cases that he treats suffer from some form of endometritis, and its baleful influence on the sympathetic nervous system is marked and manifested by numerous and varied symptoms.

The first and important principle in treatment is to relieve the passive congestion of the uterus, and this is accomplished by medicated tampons. The first tampon should be medicated with boro-glyceride, iodo-glycerine, or ichthyol-glycerine, and supported by sterilized, non-absorbent cotton tampons. The septic cases must be treated on modern surgical principles — rest, asepsis, drainage, and curetting. When the cases are diagnosed early and the proper treatment instituted, the author says the abdominal surgeon will not have his belt hanging full of suppurating tubes and ovaries.

The Relation of Residual Urine to Vesical Irritation.—Dr. G. Frank Lydston, of Chicago, contributed a paper with this title. He said it is generally accepted that most of the symptomatic disturbances incidental to certain chronic bladder diseases, especially in cases of prostatic enlargement, are dependent upon the accumulation of residual urine. The author has long been impressed with the idea that residual urine *per se* is not as important a factor in genito-urinary irritation as is or dinarily believed. He is satisfied that in a large proportion of adult males there is always a greater or less residuum of urine remaining in the bladder after micturition. If prostatic enlargement or other obstruction attacking the mouth of the bladder develop, we have the typical accumulation of residual urine characteristic of such cases. It will then be seen that there may be, at varying periods of life, extreme differences in the degree of accumulation of residual urine. The author believes that the residual urine is simply an incident upon which, if taken alone, the symptoms of vesical irritation in no wise depend. Ideally perfect drainage of the bas-fond can only be accomplished by thorough drainage from above the tube through the trigone and out of the rectum. There were certain objections to this method which the author said it was not necessary to dilate upon. He simply stated as his opinion that only by some such procedure can the bas-fond be thoroughly drained.

Laparotomy for Pelvic Diseases is no Longer a Necessity.—This paper was contributed by Dr. R. Stansbury Sutton, of Pittsburg. The assertion found in the text of the paper was founded upon the following argument: 1. We have a substitute for laparotomy in total extirpation of the uterus and appendages by the vagina, either with or without morcellement. 2. The operation has already been proven to be effectual and successful by many in Europe and in the United States. 3. Total extirpation of the uterus and appendages per vaginam gives a lower mortality than laparotomy for the removal of the appendages alone. Morcellement of small fibroid tumors gives a lower mortality than laparotomy for the removal of similar tumors. 4. These operations by the vagina shorten the convalescence of patients, who are out of bed on the seventh day. 5. In all cases of gonorrhœal, tubercular, or other infectious type of endometritis with chronic salpingitis and chronic ovaritis, a cure is not effected save by total extirpation of the uterus and appendages. The vaginal route is the best. 6. In all cases of fibroid tumors of the uterus, not reaching above or quite to the umbilicus, when the uterus must be sacrificed, total extirpation of the organ, tumor, and appendages by morcellement can be best effected through the vagina. 7. Small cysts of the ovary or broad ligament, or solid tumors of the ovary can be reached and, by morcellement and puncture, be removed through the vault of the vagina, leaving the uterus and opposite ovary and tube intact. 8. In all cases of pyosalpinx or of multiple pus centres, with coexisting solidification of the pelvic roof, total extirpation by morcellement per vaginam is the only feasible operation, and it cures the patient. 9. Total extirpation per vaginam is followed by a cure in the greatest majority of cases, as compared with laparotomy. 10. The following sequelæ after laparotomies do not occur after total extirpation by the vagina: cancer of the uterus, adenoma of the uterus, tuberculosis of the uterus, gonorrhœal infection, hemorrhages of the uterus, filthy catarrhal discharges from the uterus, ventral hernia, fecal and other fistulas, the mark of a wound on the abdomen. The nerve-storms subsequent to total extirpation are not as great as after laparotomy. The patient is restored to perfect health. This is not the case in more than fifty per cent. of laparotomies for pelvic diseases. 11. The bacteriology of infectious diseases demands removal of the uterus with the appendages. 12. Total extirpation by the vagina is in strict conformity to anatomical relations. 13. The physiological results following total extirpation are free from jarrings, and the patient is functionally a smoothly running mechanism. 14. Laparotomy for these diseases is followed by all manner of physiological disturbances which affect the vascular, muscular, nervous, and digestive systems. 15. In the face of this argument, laparotomy for pelvic disease is no longer a necessity, but in the author's opinion should be abandoned excepting in very rare instances, indeed.

Modern Surgical Technique.—Dr. Henry O. Marcy, of Boston, emphasizes the importance of a most careful bacteriological training on the part of him who would become proficient in surgical practice. In the preparation of the operating-room, Dr. Marcy pointed out the ease and safety with which an ordinary living-room, by preference the kitchen, is made comparatively sterile, when from necessity the surgeon is called upon to act promptly and suddenly. In abdominal wounds, where irrigation is not advised, he substitutes for it a slowly flowing stream of oxygen gas from a compressed cylinder. This sterile gas is heavier than atmospheric air which it displaces, and as a consequence renders the wound less likely to infection from the products of respiration and atmospheric contamination. Dr. Marcy reiterated his well-known views upon the value of tendon sutures, buried in all aseptic wounds for the approximation and reinforcement of the structures, emphasizing the importance of abandoning the drainage-tube in all aseptic wounds, and hermetically sealing of the same with iodoform collodion. Aseptic wounds made in aseptic structures aseptically closed, and sealed, are always followed by primary union.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. W. H. Wishard, of Indianapolis: *First Vice-President*, Dr. Thomas E. Holland, of Hot Springs; *Second Vice-President*, Dr. Charles B. Parker, of Cleveland; *Secretary*, Dr. Frederick C. Woodburn, of Indianapolis; *Treasurer*, Dr. Harold N. Moyer, of Chicago.

The next meeting will be held in Detroit, Mich., September, 1895. Chairman of Committee of Arrangements, Dr. H. O. Walker, of Detroit.

Dr. William P. Overton, president of the Queens County Medical Society, died recently at his home in Cold Spring Harbor, L. I.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, November 12, 1894.

W. W. Van Arsdale, M.D., Chairman pro tem.

Lead-pencil in Axilla Mistaken for Fracture of Clavicle.—Dr. Sinclair Tousey presented a young man who, prior to the time when he saw him, had been going around for about six weeks with a broken lead-pencil, four inches long, in the axilla, which had been mistaken at different hospitals for fractured clavicle. At one of the larger hospitals an abscess had been opened under ether, but it was decided to wait until the supposed fragment of clavicle had separated before an attempt should be made to remove it. When Dr. Tousey saw the patient the probe introduced into one of the sinuses came in contact with a substance which felt like bone, and as it was quite movable he administered an anæsthetic and took out what proved to be a piece of lead-pencil. The patient then remembered that it must have entered when he slid down a lamp-post and caught the pocket containing the pencil on a projection. What appeared to be a scratch marked the point of entrance.

Dr. Francis H. Markoe had seen a somewhat similar case, the accident occurring at the elbow. A door had shut as the patient was passing through, striking her arm and shawl. She consulted Dr. Markoe next morning on account of pain. He found no bruise, no abrasion, no fracture, but a hard body could be felt lying across the elbow-joint. Under ether a long shawl-pin was extracted. It had felt much like a bony fragment.

Carcinoma of Transverse Colon; Excision; End-to-end Anastomosis with Murphy's Button.—Dr. H. Lilienthal presented a strong-looking man, of middle age, who prior to the time he first saw him, in May, had been ill fourteen months, with variable pains in the abdomen, paræsthesia, gurglings, marked emaciation. In May a tumor could be felt, the size of a large egg, apparently in the transverse colon. Its location was confirmed by an operation. It was removed, with about four inches of the gut, and the divided ends were united by a Murphy button of very large size, so large that it was of tight fit and caused some fear that it might not come away safely. As it had not passed on the eighteenth day, he had gentle massage made over the abdomen from right to left and an enema given. Soon afterward the button passed, and a little blood with it. The patient had been given solid food from the sixth day. Some of the mesenteric glands were found enlarged, and a relapse was to be expected, although at present the patient was in good condition. The tumor was cancer.

The danger of using too large a button was shown in a second fatal case. The woman had a fecal fistula which had led him to make an artificial anus, and subsequently she had submitted to laparotomy seven times at the hands of different surgeons. As she wished the artificial anus closed, Dr. Lilienthal made use of the Murphy button to establish end-to-end anastomosis and then closed the wound. The gut below was much atrophied, and the button proved a tight fit, so tight indeed that it led to gangrene and death, the button having partly passed out along with fæces into the peritoneal cavity. In a third case he hesitated, but the patient insisted on having his artificial anus closed. After the experience with the second case Dr. Lilienthal used a button a quarter of an inch less in diameter, and did not at once close the artificial anus, but introduced a strip of gauze drain down to the lower segment of gut, which, as in the other case, was atrophied. This patient got through all right, the button being passed on the sixth day. Dr. Lilienthal thought there was more danger from sepsis in anastomosis for closure of artificial anus than in other forms of intestinal resection because of the difficulty of cleansing the wound thoroughly in the former, whereas Dr. Van Arsdale, during the discussion, expressed surprise at this statement, since he believed operations for closure of artificial anus gave the best results.

Dr. Willy Meyer thought the button shown was enormous, and that if we would follow the directions given by Dr. Murphy, using only the sizes which he had indicated, and made in the manner which he had described, our results would be equally satisfactory. The button should always be at hand on going to laparotomy cases.

Dr. Van Arsdale had had a case of gastro-enterostomy go wrong in spite of the button, the man dying of inanition; nothing—no gangrene—found at the site of the button to account for death.

Dr. Lilienthal said this sized button had been made by instruction of Dr. Gerster. It was, however, too large except for anastomosis of the rectum, and there even a larger one would be required if one would avoid forming a constriction in the ampulla.

Case of Ideal Cholecystotomy.—Dr. C. L. Gibson presented seven gall-stones, as large as hazel-nuts, removed from the gall-bladder and duct at a single operation. Vague gastric symptoms had existed several months before the patient entered the hospital. A tumor was felt in the region of the right kidney, and was thought to be cystic kidney, the mistake clearing up only on exploratory operation, when it was found to be the distended gall-bladder. Convalescence had been uneventful.

Dr. Dawbarn said that about the time when the Murphy button was first used in New York he sent to Chicago and got one which he used in a case of gall-stone, the diagnosis having been confirmed by the operation. The gall-bladder seemed remarkably friable, and at autopsy—death having occurred in forty-eight hours—a distinct tear was found at the edge of the button. There was also a diffuse form of cancer of the liver, and this had probably led to the friable condition of the gall-bladder, although this viscus was not carcinomatous. He had sent an account of the case to Dr. Murphy before the latter had reported a collection of one hundred successful cases, and had afterward written Dr. Murphy to learn why this fatal one had been omitted. The answer was that he did not suppose the author of the case would care to have it reported since it was unsuccessful, and also because it was an attempt to unite a cancerous gall-bladder with the duodenum, which was not true.

Resection of Rectum for Malignant Growth; Persistent Neuralgia in Scar.—Dr. Van Arsdale presented a man, fifty-four years of age, about six inches of whose rectum he had excised through the sacrum, for carcinoma, in 1892. The proximal end of the gut was drawn down and sutured to the anus, a secondary operation was done the same summer, and in March, 1894, two small carcinomatous nodules were removed from the rectal mucous membrane. Since then the man had been in good health, and had control over the bowel. Advice was asked with regard to the relief of pain which existed along the line of union between mucous membrane and skin.

Case of Volvulus of the Sigmoid Flexure, with Comments.—Dr. Francis H. Markoe said it had been his intention to present a paper on intestinal obstruction, based on sixteen cases which had come under his observation, but for lack of time he limited himself on this occasion to a recent one of volvulus of the sigmoid flexure, with comments. The man had had symptoms of intestinal obstruction about eleven days before he was brought to Bellevue, where Dr. Markoe saw him, there having been no passages since the third day. He found the abdomen much distended, especially on the right side. High rectal injection was made in the knee-chest position, but nothing came away. He then opened the abdomen and found a loop of the large gut completely turned upon itself and greatly distended with gas. This was gently untwisted after letting out the gas. An ecchymotic spot, the size of a silver dollar, was found and the loop was secured at the bottom of the wound by a gauze strip

passed through mesentery. There was no evidence of congenital or acquired stenosis. The patient improved steadily for four days, and on the night of the fourth day had several passages in response to small doses of calomel. On the fifth day he suddenly collapsed, colotomy was performed in the attached loop, but he died soon afterward from perforation at the ecchymotic spot, which had become gangrenous. Dr. Markoe asked discussion on how to prevent recurrence.

Dr. De Garmo inquired whether the gangrene took place at the point of puncture for letting out gas. He had observed tendency to gangrene even after puncture with very small trocar.

Dr. Markoe thought the question a pertinent one, but in this instance the gangrene had occurred at the point of doubtful vitality, a little above the puncture.

An Improved Method of Radical Operation for Carcinoma of the Breast.—Dr. Willy Meyer read the paper. See page 746.

Dr. H. J. Boldt said he had not removed the breast in one mass as described in the paper, but in two cases he had performed the operation as radically, removing muscle. One patient had died. The other, who was operated upon two months ago, could not use the arm as well as before, and had some interference with the circulation. He did not doubt the superiority of removing all that it was intended to remove in one piece.

The Axillary Operation Needless.—Dr. Thomas H. Manley said that according to his own experience it was entirely needless to go up into the axilla in removal of cancerous breast. Going down to the pectoral muscle increased the danger to life—danger of injuring the axillary vessels and brachial plexus. When the parts were closed in, the scar held the arm down and interfered with the circulation in the axilla. Moreover, the theory on which such extensive removal was based, that cancer was a local disease, had not been proven. He remembered a statement made by the elder Markoe, some years ago, when removal of the axillary glands was coming into vogue. Dr. Markoe had said he did not believe in it, for the axillary enlargement was only due to tumefaction, and this went down as predicted, in the case on which he was operating, after he had removed the diseased breast. Unless it were in special cases, Dr. Manley did not think such extensive dissection as had been described by Dr. Meyer was necessary.

The Axillary Operation Imperative.—All the remainder of the speakers took pains to combat Dr. Manley's view, that removal up into the axilla was not necessary. Even where no infiltration in the axillary glands had been apparent, microscopic examination had shown the presence of cancer cells. The statistics of cures had been much better after the more radical excision than previously. All thought well of Dr. Meyer's procedure, some claimed to have been in the habit of removing muscle along with the gland tissue, and the question of priority was raised even as to removal in bulk, commencing in the axilla. The speakers were Drs. Dawbarn, Gallant, Morris, Fowler, Lloyd, Van Arsdale, Meyer. Dr. Francis H. Markoe said that in a recent conversation with his father the latter had admitted the superiority of the radical operation as having been proven by recent statistics.

The Tenement-house Commission appointed by Governor Flower last spring, in accordance with a bill passed by both houses of the Legislature, find that a new list of more than five thousand houses require especial investigation. They further find that three-fourths of this city's population live in tenements. Of course a large deduction may be made in favor of high-class flats and apartment-houses, but the law does not discriminate between Fifth Avenue and Chrystie Street. Three or more families constitute a tenement according to the legal definition.

Correspondence.

OUR LONDON LETTER.

GLADSTONE ON CLARK—DRUGGIST APOTHECARIES AND SIR B W. RICHARDSON—THE MARYLEBONE EPIDEMIC—TESTIMONIALS—LISTER — HUGHLINGS JACKSON — WALTER RIVINGTON—MEMORIAL TO BEAVEN RAKE—DEATHS OF ALBERT NAPPER AND SURGEON GENERAL FRASER—MEDICAL COUNCIL — SMALL-POX — DIPHTHERIA AND ANTITOXIN — CLINICAL EVENINGS AT THE SOCIETIES — INTERESTING EXHIBITS AT THE MEDICAL AND CLINICAL SOCIETIES—OPENING THE CÆCUM—LARGE CALCULUS—HEREDITARY SYPHILIS—CRETINS—RUPTURED NECK OF BLADDER—EXCISION OF SCAPULA—EXTENSIVE TUBERCULOSIS OF PERINEUM, PROSTATE, AND RECTUM—TREPHINING FOR EPILEPSY—CURIOUS NODULES, ETC.—MEDICAL DEPUTATION TO THE HOME SECRETARY—MARRIED WOMEN AND FACTORY WORK — DEATH CERTIFICATION — MASSAGE SCANDALS — LONDON DEATH RATE — PUBLIC HEALTH—DEATH OF DR. DICKSON, R. N.

London, November 24, 1894.

I HEAR that Mr. Gladstone is about giving to one of your American magazines some reminiscences of his late friend Sir Andrew Clark. This reminds me that the considerable fortune left by the respectable medical baronet has given rise to much gossip as to its origin. It is not infrequently said that the sum was accumulated from practice, and as it exceeded £200,000, that is enough to make any physician's mouth water. I happen to know, however, on the best authority—Sir Andrew's own—that he was careful and fortunate as to investments, and to them we must attribute a considerable share in the accumulation. A daily newspaper has lately discussed the "Fortunes Left by Doctors," but without affording any important information.

Sir B. W. Richardson has returned in his last *Asclepiad* to his proposal to legalize druggists as counter-prescribers. He would have an order of "pharmaceutical apothecaries" to occupy itself with inferior practice as well as dispensing, and pretends that such an order would quickly accept medical etiquette and submit to the rule of their professional superiors. It is a pity that, with all his abilities, Sir Benjamin should have such self-consciousness as to fancy he has only to speak to settle any difficulty. It is a wonder that his love of admiration did not prompt him to drop his proposal when he saw how unpopular it was. But he has spoken and seems to think that is enough. He will perhaps yet see his error. The idea of relieving the overcrowding and resulting degradation of the profession by flooding it with unqualified practitioners, is original enough, and worthy of the fertile fancy of the *Asclepiad*. Why does he not also offer to take in our sanitary inspectors? These persons, elect of our vestries, are forging ahead, and in some districts evidently intend to assume as many as possible of the functions of the medical officers of health. Perhaps they hope to become the chief advisers of our sanitary boards. Let Sir Benjamin extend his hand in time and recognize them as specialists in preventive medicine. Then hygeia would indeed be established, and physicians might be relegated to an inferior order.

During the late outbreak of small-pox in Marylebone Dr. Greenwood vaccinated 1,725 persons and revaccinated 2,306. There was in fact a local scare, and a rush to obtain the protection which had been so much neglected. It appears from Dr. Greenwood's report that about twenty-six per cent. of the inhabitants had been guilty of such neglect. After the performance of these operations only two or three cases of small-pox occurred in the whole number, and these were already incubating the disease. The anti-vaccinators will find small comfort in these figures, but I suppose will not cease to propagate their pernicious prejudice. Perhaps an occasional scare of this kind is the only way to teach

them the futility of their fad when the public finds danger approaching.

Testimonials are much in vogue, and make no small demands on the often too slenderly furnished purses of medical men. Just now three important ones are before us—one to Lister, one to Hughlings Jackson, and one to Rivington. All three desire the support of those whose finances make it easy to subscribe. It may be thought that Lister has already received all the honors that are necessary during life, and that the rest might be left for posthumous commemoration; but no doubt the ever-widening circle of antiseptic surgeons, at any rate the prosperous ones, will hasten to enroll their names. Hughlings Jackson has also done a great and lasting work, and neurologists everywhere will be glad of the opportunity to honor him.

Walter Rivington's work has been so closely connected with the London Hospital, and he has been so favorite a teacher, that it was only natural for his numerous pupils and admirers to seize the occasion of his retirement from active service to testify their esteem. Accordingly he was entertained at a dinner last week, and presented with a silver tea and coffee service. Mr. Rivington thanked the numerous friends who had gathered to honor him, as well as those who were unable to be present but had subscribed to the handsome testimonial —adding with the sly humor which never fails him, "and also those who had judiciously refrained from doing so."

From testimonials to the living, it is natural to pass to memorials to the honored dead. The work of the late Dr. Beaven Rake, of the Trinidad Leper Asylum, is worthy of admiration, and his premature death, leaving a widow and children but ill-provided for, is the occasion of a proposal to raise a sum of money for their benefit. It is impossible not to wish success to the subscription. The scientific spirit was strong in Dr. Rake, and he died too soon to make suitable provision for his family—a too common occurrence in our ill-remunerated calling.

The death of Mr. Albert Napper took place last week, somewhat suddenly, in the seventy-ninth year of his age. He will be remembered as the Founder of the Cottage Hospital system, now so generally in vogue that, to the younger members of the profession it must seem strange that one life should cover the time since there were no such institutions. Mr. Napper's earnest advocacy and unfailing perseverance succeeded in establishing the system which everyone now admires.

Another veteran also died last week, Surgeon-General John Fraser, aged seventy-five. He had seen much service, including the Crimea and the Indian Mutiny. He had received various honors, and on his retirement a distinguished service pension.

Next week the General Medical Council will be in session.

The public health continues good. The small-pox epidemic, in London, has apparently subsided, and diphtheria deaths have diminished. In regard to the last the serum treatment is occupying great attention, and is being tried wherever a supply can be obtained. The successes reported are very striking, and it is to be hoped the British Institute will soon be in a position to meet the demand for the new remedy.

What are called clinical evenings at the societies are becoming very popular. They are devoted to the exhibition of cases and specimens with a few remarks to explain them, and attract larger attendances than set papers. The Medical Society of London has begun to hold such meetings, as the Clinical has long done. Both these had such evenings at their last meetings, and both were well attended and the exhibits were of great interest. Thus at the Medical Society, which met on Monday last, Mr. Harrison Cripps gave an account of a most interesting case of intestinal obstruction in a woman, aged thirty-one, who had sustained two severe operations, but ultimately made a good recovery and is now in good health, and has resumed her occupation as a domestic servant.

Mr. Goodsall showed a man who had come to him with intestinal obstruction due to cancer of the rectum. He performed left inguinal colotomy to relieve the obstruction, but the colon was so distended and packed with putty-like fæces, that he was unable to draw the gut out of the wound. He waited for seven days in the hope that some bulging would take place, but as the patient at that time began to get into a serious condition, he decided to attack the cæcum. He found this filled with the same putty-like fæces, but managed to pull it out, and he opened it forthwith, with a satisfactory result. This was the third time he had opened the cæcum, and he was inclined to regard this operation in certain cases as presenting advantages over colotomy. Among the other cases shown was one by Mr. Astley Bloxam, in which thirteen ounces of calculus were removed by him through a lumbar incision. The curious point about the case was that the symptoms at no time suggested the presence of anything approaching so large a mass of calcareous deposit.

Dr. Hall showed a boy sixteen years of age, who had developed hereditary syphilis as late as in his eighth year of age. Some other late cases were mentioned by those present, one of whom said he had seen it as late as the twentieth and even thirtieth year of age.

Mr. Clutton showed a boy thirteen years of age, who had had the humerus dislocated, and the surgical neck of the bone fractured. The fracture and joint were exposed, ivory pegs employed, etc., and perfect movement of the joint resulted.

Some cretins were exhibited. Thyroid gland treatment had produced excellent results in some of them.

The Clinical Society of London held their meeting on Friday, November 9th. Mr. Hurry Fenwick showed a patient with traumatic rupture of the prostatic neck of the bladder, who had been buried while excavating. Twelve hours after the accident suprapubic incision revealed the condition, and the bladder was drained through a perineal incision. Mr. Fenwick urged that in all doubtful cases suprapubic incision should precede the opening of the peritoneum, and he believed that most extra-peritoneal uncomplicated ruptures ought to bec ured.

Dr. W. P. Herringham gave an acount of a case of scleroderma in a seaman, thirty-nine years of age, who had been for sixteen years a diver.

Mr. Watson Cheyne showed a man, fifty years of age, from whom he had removed the scapula five weeks previously, on account of a large enchondromatous tumor of seven years' growth, involving the whole bone and projecting forward into the axilla. The tumor weighed over ten pounds. The wound healed by first intention, and the patient left the hospital sixteen days after the operation. The movements of the arm are steadily increasing in range and power.

Mr. Arbuthnot Lane showed a case of extensive tubercular disease of the perineum, prostate, ischio-rectal fossa, and rectum, which he treated successfully by the introduction of glycerine and sulphur into the cavities; which was begun on September 4, 1894, when he weighed eight stone eleven pounds; now he weighs ten stone, and is free from pain.

Dr. Barlow showed a case of extensive primary atrophy of the muscles of the limbs and trunk, with lordosis and some contraction of hips, in a lad five years of age. No particular muscles were atrophied more than others, the atrophy being pretty general, but in some respects the case resembled pseudo-hypertrophic paralysis, but was difficult to classify; and Dr. Ormerod suggested that it belonged to the "myopathic" group of pseudo-hypertrophic cases.

Mr. Butlin showed a man in whom he had performed trephining for traumatic epilepsy following a fall of eight feet, the head striking against the mantel-piece. He removed a second piece of bone, but discovered nothing further. He let out the fluid in the subarachnoid space, and the man made a good recovery, though

his mental condition remained unsatisfactory for some time.

Mr. Gould mentioned a curious case of a man who had struck his head in a bath. After operation he appeared to be better, but his mental condition never became satisfactory, and he was not altogether free from fits. He was lost sight of for a time, but Mr. Barker said the man had come into the hospital under his care some days since. He gave an altogether misleading history of himself, denying ever having had fits or having been operated upon. The examination of the scalp led one to think that there was a depressed fracture, but on receiving the real history the idea of operating thereon was abandoned, the supposed depressed fracture, on shaving the scalp, being obviously the scar of Mr. Gould's operation.

Mr. Jacobson showed a man who had been operated on for bullet wound of the parietal lobe, inflicted while skirmishing on the west coast of Africa, where he was struck by a bullet which lodged in the lower part of the left parietal lobe, or at the junction of this with the temporo-sphenoidal. He became unconscious, and after five weeks he returned to England, his wound closing for a time, then, reopening, giving exit to pieces of bone and discharge. During this period there had been no hemiplegia, no hemianæsthesia, no crossed amblyopia. Severe headaches frequently occurred when the wound closed for a time. On June 27th an attempt was made at Plymouth to remove the ball, but as brain matter escaped this was desisted from. Save for the headaches his general health was excellent. On October 19th the opening was exposed and enlarged, when one came upon the mouth of a sinus-like track in the dura mater, blocked with granulations. This membrane was quite healthy all round. Two small pieces of bone were removed from a spot about three-quarters of an inch from the mouth of the sinus. Two inches further in, the probe struck the bullet, which was removed by the aid of a sharp spoon. He made a rapid recovery, and has since entirely lost his headaches.

Dr. Hale White showed a boy aged ten, who, when near the end of a first relapse of typhoid fever, developed a severe eczema which rapidly spread—the whole face and ears were covered, the eyes being affected with conjunctivitis—and slowly subsided in about six weeks.

Dr. Harry Campbell showed a case of acromegaly in a man aged forty-six.

Dr. Scanes Spicer showed a case of incomplete Graves's disease with nasal polypi, in a young woman. After removing a large number of polypi, the patient had improved in some respects, and he thought that the connection between these two conditions was something more than a coincidence.

Dr. G. Stoker said he had had a case of goitre along with intra nasal growths, in whom the treatment of the nasal condition was followed by the disappearance of the goitre within two months.

Mr. Godlee showed a man aged twenty-eight, with multiple nodules of doubtful nature which began in April. There were numerous hard nodules in the eyelids, on the forehead, jaw, arms, condyles, etc., and on the knuckles. Microscopically, the nodules were said to be composed of fibrous and not lymphatic tissue.

Mr. Boulby showed a man, aged fifty-eight, with Charcot's disease of the hip with dislocation. The evidences of tabes are as follows: Lightning pains in limbs, dim vision, and gray atrophy, absence of knee jerks, and inability to stand with the eyes shut.

Mr. Edgar Willett showed a similar case.

On Wednesday, November 14th, Mr. Asquith received at the Home Office a deputation got up by a committee of the British Medical Association. The object was to influence the minister on three questions, viz., the employment of married women in factories, death certificates, and the factory laws. The injury to children from the employment of their mothers in factories has often been brought forward as an argument in favor of legislative prevention, and Dr. Reid urged this view on the Home Secretary with considerable force, estimating that the infant mortality was twenty eight per cent. greater in factory towns than in other parts. He insisted that women should be prohibited from such work for three months after the birth of a child. Mr. Asquith asked if the month before birth was not equally important, but was told that was a separate question, and apparently the deputation were not agreed upon it. The minister has evidently thought out the subject, and the newspaper reports show that, although he grasped and sympathized with the object of Dr. Reid, yet, looking at the matter from a broader standpoint, he saw some difficulties in the way. Thus, though employers are generally ready to keep a woman's place open for her return, it is by no means certain they would do so for a period of three months. Again, he remarked that, although it was a good thing to check improvident marriages, it would be the reverse to engender a feeling that the child was in the way. Then, as to *crèches*, there was a rather strong prejudice against them, and though only a prejudice, yet its existence was a fact to be reckoned with. Mr. Asquith said he did not make these remarks in a hostile spirit, but they were objections that must be carefully weighed, and he promised that the subject should be carefully considered.

As to death certification, assurances were offered on the part of the government of their concurrence, saving the question of cost, and whether the time of Parliament would suffice. There was also little difference as to the factory acts.

Of course Mr. E. Hart was much *en évidence*, and he seized the opportunity to mention the massage scandals lately reported in the *British Medical Journal*, and which he is continuing to publish in very short instalments double leaded and "to be continued," after the manner of sensational chapters in "penny dreadful" periodicals.

Mr. Asquith expressed his disinclination to deal with such a subject in public, and said it was not in his judgment fitted for such an occasion; but as Mr. Hart had chosen to introduce it, he would simply say he was willing to receive any authenticated information to show there had been, or was likely to be, any breach of the law. He pointed out that the police are not guardians of morality and could hardly interfere on moral grounds unless the law was infringed; but Mr. Hart might rely upon the co-operation of the police within their proper functions. The view of the home secretary is naturally unsatisfactory to Mr. Hart, who is evidently already tired of the sensation he has tried to get up. Accordingly I see the *Journal* to-day says it is "eminently desirable that the police should take this matter off our hands as speedily as possible."

No doubt that would be a course to afford gratification to others than the staff of the *Journal*, but the probability of such success should have been weighed before embarking on so dangerous and disgusting a course of sensation. Nevertheless all may hope that good will come out of the exposure that has been made, and some way of dealing with the subject arrived at.

The public health continues to be excellent in spite of the most trying weather. Last week the death-rate in London was only fifteen, although diphtheria still lingers with us. But the cases are diminishing week by week.

The Registrar-General reports that last quarter (ending September 30th) was the first summer quarter since 1837 that the annual rate fell below 15 per 1,000. This last it only reached 14.2. Yet the summer was marked by low temperature, excessive rain, and deficient sunshine, and though we are still having what is generally declared "most unseasonable" weather, the mortality returns are most favorable.

Dr. Walter Dickson, R. N., medical inspector of H. M. Customs, died on the 9th inst., in the seventy-fourth year of his age. He was a man of considerable learning and literary tastes. He had done no little service in the

Royal Navy, and had received many medals and other recognitions.

His published writings and addresses were numerous, and all were characterized by a thorough grasp of his subject, which he put in an attractive form.

MALARIA AND DRINKING-WATER.

To the Editor of the Medical Record.

Sir: I have noticed several articles on malaria as a water-borne disease in the Medical Record of the last few weeks.

Allow me to side with Dr. Dalrymple, and suggest a few more objections to the theory of Dr. Daly's.

I lived as a boy in Southwestern Missouri, when that portion of the State was metamorphosing from a stock-raising to a farming community, and am familiar with about all forms of malaria, and speak from personal experience. I have seen families drinking surface water remain free from all infection, only to become prostrated as soon as they began breaking land. This was not in a few instances, but was the regular thing.

The old settlers, who lived on the creek-bottoms and who arose early, before the sun had dissipated the morning fog, were always sick, while their neighbors living higher on the hills, and who awaited the rising sun before beginning work, would frequently escape. Sleeping on the ground would always bring on an attack of the chills, while sleeping twenty feet above the surface gave immunity even when the same water was used.

Intermittent fever has followed the settlement of this country from Indiana to California, keeping pace with the turning of the sod.

It was also noticed that in Ohio and Missouri, during the time of making maple sugar, to use the sap with anything like freedom was invariably followed by intermittent fever. This was well known and added zest to every swallow of that exhilarating fluid. This was before the advent of the plasmodia malariæ into medical literature, and was a curious clinical fact with no tenable theory to support it then.

It has seemed to me, too, that the persons who used sorghum molasses freely were rather more susceptible to the poison than others, and that the young and growing, who needed sugar to keep up muscular growth and activity, were more likely to become intoxicated with the poison.

I have never seen any account of cultures of the plasmodia, but I could venture a guess that it would only grow in a medium containing an appreciable percentage of sugar.

The value of the eucalyptus-tree as a prophylactic, as proven by the experiments made near Rome, must rest on the germicidal qualities of the rootlets—in the oil that they contain—and not in the minute particles of that oil given off by the leaves to the passing breeze.

I think quite likely that the home of the plasmodia is in the sap of vegetable life rich in sugar. While water is the frequent, perhaps common, source of infection, yet I know that it does enter the system from other sources as well.

Rawlins Cadwallader, A.M., M.D.

Fall River Mills, Cal.

THE MARRIAGE OF SYPHILITICS.

To the Editor of the Medical Record.

Sir: In your issue for November 24th, under "The Marriage of Syphilitics," Dr. W. K. Otis, of New York City, criticises the "positive stand" taken by myself, in a previous issue, on the above-named subject. Whether my replies to Dr. Burnside Foster are satisfactory to him or otherwise, I leave for him to answer for himself. If my answers to Dr. Foster's queries are not acceptable to himself, he certainly had better continue his investigations far enough and thoroughly enough to satisfy himself that "allowing our syphilitic cases to marry" and procreate is, at all times and in nearly all cases, a hazardous thing to do.

Dr. Otis says, "Unfortunately Dr. Maine has taken a very positive stand in this matter, and one that is *wholly* (italics mine) *unwarranted* by either authorities or facts." I desire right here to ask, "unfortunately" for whom? Certainly not for myself, and most assuredly not for all good and honored representatives of pure American citizenship.

If "unfortunately" for the band of syphilitics who would prey upon innocent purity through the sacred marriage contract, or "unfortunately" for the physician who would sanction such marriages, and overlook the greatest good to the greatest number, and cater to the selfish purposes of thoroughly selfish unfortunates, I glory in the "unfortunately" "positive stand" I have taken.

When Dr. Otis says, "Wholly unwarranted by either authorities or facts," I take again my "positive stand," and am ready to take issue with the doctor and declare that both "authorities and facts," in far more than the average, fully bear me out in the "positive stand" I have taken.

Yes! I have taken a "positive stand" and am ready, were it necessary, to stand alone for what I believe to be right (but I have not found it necessary to stand alone, as I have already received many words of commendation and encouragement from numerous sources), and in the defence of pure marriages and the propagation of a race that shall be an honor to the nation.

I desire, furthermore, to be understood as to the sources from which I have gleaned a large percentage of the "facts" which have led up to the formation of my opinions and my "positive stand:" 1. To the evidences furnished by a careful study of the works named by Dr. Otis, to which list I also desire to add the names of Fournier and Wood. 2. Considering the guarded manner in which all present the conclusion "that it may in certain instances be safe for syphilitics to marry." 3. To this strong line of evidences, that there is danger in permitting syphilitics to marry, I attach the evidences gathered from journal statistics published during the past twenty years; and 4, last and least, my own experience ranging over a longer period than that, which (though, since graduation, I have not had the advantage of "study of the disease in the rich fields for research only obtainable in great cities") have yet been sufficient to teach me, at least, the dangers of syphilitic marriages. But I do not want Dr. Otis to think that the "great cities" have all the "luxuries," for even in my own "small city" the vile enemy to health, happiness, and home lurks; and, sad to relate, we have rich fields for study, and have plenty of material from which to observe and draw conclusions respecting that blight and blot on everything good and pure that it touches (syphilis), even in the country districts.

Having thus briefly stated the sources from whence I have drawn the "facts" which have led me "to feel justified in presenting my opinion" (no matter to whom it is in opposition), simply passing the doctor's comment on my mention of scrofula, with the sole explanation that in my former paper I merely referred to it as one of the conditions handed down from past generations; barely adding that I have at my command the latest "works on general pathology" and am able to see that opinions differ in respect to the subject, I will pass on and draw a few conclusions:

1. No writer says every syphilitic can marry.

2. Every writer declares great care should be exercised in permitting the marriage of syphilitics.

3. Every writer who has carefully compiled statistics (so far as I can find), has followed but the first two generations, except in a very few special instances not amounting to three per cent. of the total.

4. The average ages of the children, or second generation, when pronounced apparently healthy (by all statistics at my command), is a little over fourteen years.

5. In a little over fifty-three per cent. of the parents (first generation) who had suffered from syphilis previous to marriage, the cases have shown unmistakable evidences of syphilis subsequent to the birth of said "apparently healthy child or children."

Now, allowing a moderate average, say fifty per cent., of the said remaining, forty seven per cent. might have died from other causes without showing a recurrent syphilis, but would had they lived, and taking out twenty-five per cent. more of the remaining forty seven per cent. as having passed out from under observation (and that is small enough), and we have left a very small percentage as even questionably safe to permit marriage to be contracted; and who is competent to select that small percentage in the early days of the syphilitic cases? I acknowledge that I am not, and statistics show that others have made serious mistakes.

6. If a parent who, apparently cured, procreates (and these conclusions are arrived at from the printed statistics of writers favorable to allowing "the marriage of syphilitics" under certain conditions) children who at ten, twelve, or fifteen years are apparently healthy, and then the parent, in from one to twenty years thereafter develops unmistakable evidences of syphilis in the later types of brain degeneration, cerebral and spinal gumma, syphilitic nodes of various bony structures, or other equally or more grave lesions of syphilis, does any physician believe that that child of such parent has no syphilitic taint lurking in its economy? Does any physician believe that that child will not some day show unmistakable signs of syphilis, unless specific treatment has been kept up during gestation or for the child after birth? Does any physician believe that the third generation, or child of that child, will be an honor to the human race? I, for one, do not.

I quote Dr. Otis's own words: "Some of the most healthy persons of my acquaintance have been born of parents, one of whom, at least, had been a sufferer from syphilis before marriage; nor have I observed the slightest trace of the disease in any form passed down to the third generation." I must ask then: 1. What can be the condition of health of the people of Dr. Otis's acquaintance who have not been "blessed" with one parent, at least, who has suffered from syphilis?

2. What would have been the health of those "most healthy persons" of his acquaintance, had both parents been "blessed" with pre-nuptial syphilis?

3. Dr. Otis's experience, in his field of observation, being so different from that of all writers down to the present time, will the readers of the MEDICAL RECORD be willing to accept his conclusions and opinions, which almost place a premium on people who have had at least one parent who has suffered from syphilis before marriage?

4. Is it possible, in the great field for observation which New York City furnishes, that the doctor has not "observed the slightest trace of the disease, in any form, passed down to the third generation?" I must infer that he has either shut his eyes to the bare-faced facts which are constantly confronting all his brethren in the profession; that his experience has been very limited; or that he has not seen the third generation yet born. Conclusions drawn from a few special cases, when the facts and experience of thousands of cases in opposition as observed by every-day experience, are at hand, would form a precedent unwarranted, and one which might lead, yes, would lead, to untold misery if generally followed by the profession, and the unlimited marriage of syphilitics be permitted. It is the general public we are to defend for the best good of all, and deal with those who are a menace to the general good in such a way as shall best fulfil that purpose.

I now reach the doctor's conclusion, and with all respect to the titled author of those closing words, I must take my positive stand once more and first of all say: If syphilitics must be satisfied, let that satiety be in whoredom and concubinage, its honest birthplace and proper habitat, and not in the home which is the avowed heart of a nation, and on which a nation's welfare depends. Let us not be blinded by individual calamities and thereby bring national degeneracy.

The doctor's last clause, of his quotation, reads, "Would probably not in the least diminish the prevalence of syphilis." I admit the force of this argument, and again I say, let it remain where it belongs and not let it enter the sacred home of the pure and innocent, and bring upon such misery and death, or what is worse than death.

By all that is good in man, by all that is dear to woman, by all that is sacred of home, let this nation be populated from the homes of purity, or else let it follow, as it certainly will, the course of some of its "illustrious" predecessors.

FRANK E. MAINE, M.D.

AUBURN, N. Y., November 28, 1894.

THE CAUSE OF BERIBERI.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Dr. Siegfried, in an article published in your journal of December 8th, declares it his opinion—and let me say the opinion is not new—that the chief causative element in the etiology of beriberi is "the lack of the nitrogenous foodstuffs, particularly of the fresh flesh sorts, in the habitual diet of the natives" affected by this disease.

I beg Dr. Siegfried to see how he can reconcile the following facts with this theory: Baelz says "that the Japanese diet, far from being wanting in albumin, is, for the lower classes, at least as rich, perhaps richer, in albumin than the food of the poor in most European countries." "That rice," he says, "cannot produce kakke in any manner, is distinctly shown by the circumstance that in the interior, where rice is a much more important factor of the popular diet than on the coast, where fish is abundant, the disease is incomparably rarer than on the littoral." Of course the interior is the region of high ground.

"Persons of strong constitution are more frequently affected," says Baelz, "than weak persons; likewise persons placed in favorable social conditions more frequently than those belonging to the lower classes. Of 626 policlinic patients, there were 593 of strong constitution, 27 of middle constitution, and 6 of weak constitution. Such numbers," says Baelz, "are simply annihilating for the theory according to which kakke is the result of insufficient alimentation and consequent weakness. Simmons also speaks very earnestly against that theory."

"The best fed, the best nourished, and best cared for are usually the most frequent subjects of the disease, while the weak and destitute are only exceptionally attacked by it."

"According to some physicians fat people are quite peculiarly disposed to kakke."

"The adzuki bean enjoys a great repute as a food for beriberi patients, which is well deserved by its unquestionable diuretic properties, so important in this special disease."

"Among the Japanese, the flesh eaters, that is soldiers and sailors, the best nourished part of the nation, are more affected by kakke than the rest."

Even with the addition of the adzuki bean diet, it is considered essential by every Japanese, or foreign, doctor in Japan to send the patient to a high elevation. And why is elevation so important? Are patients better fed on elevated ground? Why does not an analysis of the blood show a deficiency of red corpuscles?

Yours truly,

ALBERT S. ASHMEAD, M.D

NEW YORK, December 8, 1894.

The Irish School of Medicine is said to be declining both in the quality of its teachers and the number of its students.

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Original Articles.

THE PRESENCE OF ALBUMIN AND CASTS IN THE URINE OF FOOTBALL PLAYERS.[1]

BY ANDREW MACFARLANE, A.B., M.D.,

INSTRUCTOR IN PHYSICAL DIAGNOSIS AND CLINICAL MICROSCOPY, ALBANY (N. Y.) MEDICAL COLLEGE.

WHEN in 1827 Dr. Richard Bright announced the clinical unity of dropsy, albuminous urine, and disease of the kidneys, the significance of albuminuria became at once apparent. Since that time the importance of the examination of the urine and the diagnostic value of the determination of its proteid constituents have held high place in clinical work. The effect of the discovery of this association of symptoms, however, was to lead to the inference that the presence of albumin in urine always indicates renal disease, and renal disease with a rapidly fatal termination, a belief which prevailed until about twenty years ago. But in the past two decades a number of distinguished clinicians, Leube, Senator, Posner, T. Grainger Stewart, Saundby, Mahomed, and others, have found that albumin was at times found in the urine of people in whom there was no detectable disease of the kidneys. Some have even asserted that albumin could be found in the urine of every person if sought for with sufficiently delicate tests; thus Posner found an albuminous body in the urine in all of seventy persons; Chateaubourg in 592 cases out of 701; T. Grainger Stewart in 275 healthy soldiers, and in seventeen per cent. of 50 children.

This claim of physiological albuminuria has, however, had many opponents, and to-day the latter hold that renal albuminuria always indicates diseases of the kidneys, which, though concealed for a time, will eventually reveal itself. They assert that Bright's disease develops intermittently by acute periods of inflammation interrupted by remissions more or less complete, which may last for years, during which time the albumin entirely disappears, due to the cicatrization of the lesion; that granular kidney seems to date its existence to some period of anxiety or worry, and that increased tension of the pulse is met with in certain states of nervous excitement. Temporary albuminuria of the neurotic is likely, therefore, in their opinion, to have a serious even if remote ending.

The believers in a physiological albuminuria claim that albuminuria frequently occurs without present or future disease of the kidney, and unless accompanied by other symptoms has no pathological significance. They maintain that the albuminuria which occurs in conditions of nervous excitement, after physical exertion, from the consumption of egg albumin, after baths, after sexual excitement, at the beginning of puberty, after marked sweating, does not indicate a lesion of the kidneys.

This incomplete summary indicates briefly the general character of the opposing opinions as to the significance of albuminuria. That this subject is one of the deepest interest to all physicians is self-evident. It must be a matter of some importance to all of us, and of the deepest concern to our patients, that we properly interpret a condition which may be either the danger-signal of an incurable malady or a trivial occurrence of no special significance.

It will not be necessary to consider in detail the different kinds of albuminuria, but merely to recall them to your recollection. I shall, however, take the liberty of considering more at length a cause of albuminuria which, although always recognized, does not appear to have been sufficiently investigated.

The forms of albuminuria are naturally divided, for clinical purposes, into two great classes—accidental albuminuria and renal albuminuria.

Accidental albuminuria is the result of an admixture of albuminous fluids, as blood, pus, chyle, with urine itself free from albumin. In such cases the urine usually contains a small quantity of albumin, and invariably a sediment of elements characteristic of the fluid admixed, as blood-cells, pus cells, etc. To this class—the accidental albuminurias—belong many cases which, I believe, have too often been denominated functional or physiological albuminuria. Sir Andrew Clark, with his remarkable medical acumen, recognized this fact, and stated that "in some young men excited by sexual desire and denying it indulgence, there was secreted from the urethra or its adjacent glands a fluid which, mixing with the urine, yields evidence of the presence of serum albumin" (albumose?). Sir William Gull probably had this same fact in mind when he said, "albuminuria is almost as common in young men as spermatorrhœa." Many of the functional albuminurias of puberty, and probably also a number of the cases of neurasthenic albuminuria properly belong to this class.

Renal albuminuria may also, for clinical purposes, be subdivided into—1. Albuminuria, due to a primary lesion of the kidneys. 2. Secondary or complicating albuminuria, due to (*a*) circulatory derangements, as in cardiac disease—this may, however, eventuate in renal disease; (*b*), febrile conditions depending upon changes in blood-pressure and in the epithelium of the kidneys, and also the result of the excretion of the toxines of disease; (*c*), changes in the composition of the blood, as in anæmia and chlorosis. 3. Functional or so-called physiological albuminuria, the result of muscular exertion, mental strain, cold and cold bathing, diet, and without any other symptom of Bright's disease. Of these only the so-called physiological albuminuria need be considered, as the significance of albumin in the other forms of albuminuria is beyond question.

Functional albuminuria is commonly said to be characterized by—1, absence of all other symptoms of Bright's disease; 2, chance detection while the person was apparently in good health; 3, quantity of albumin is comparatively small, and at times in the twenty-four hours is entirely absent; 4, absence of the casts.

That albumin due to the above-mentioned causes is at times found in the urine has been known for a long time.

In Germany, albumin has been detected in the urine of soldiers after long marches. In England, Pavy found albumin in the urine of Weston, the walker; T. Grainger Stewart, in persons after violent exercise, and Mason in two out of five school boys after a run of six miles. In this country Lambert, of the Equitable Life, has found that when the temperature goes to zero or below, or when it passes 90° F., the percentage of healthy men having albumin in their urine increases from two per cent. to five per cent., until the temperature reaches nearer the mean. Gray, in a recent paper, states that he has

[1] Abstract of a paper, Albuminuria, its Detection and Significance, read before the Albany County Medical Society, November 21, 1894.

found persistent albuminuria, with frequent hyaline casts, in almost all his cases of functional nervous disease.

Unfortunately the tests by which some of these results were obtained are not given, and it is to be feared that some of these investigators used such delicate reagents that doubt can justly be held in regard to their results. In Posner's set of seventy cases, Malfatti claims that mucin had been mistaken for serum-albumin, and it seems probable that albumose, a constituent of the seminal fluid, has frequently been mistaken for albumin. This, I think, is probably the case in many young men and in neurasthenics.

There is no doubt, however, that albumin does at times appear in considerable quantities in the urine when the kidneys are apparently normal. As excessive physical exertion, mental excitement, cold baths, and albuminous diet are each individually said to be provocative of this condition, the writer thought that where all these exciting causes were combined, as in foot-ball, albuminuria to a marked degree ought to be present. An examination of the urine of nine foot-ball players passed immediately after the game was made, November 10th, gave the following results:

Case.	Reaction.	Specific Gravity.	Albumin. Heller's Test.	Sugar. Nylander's Test.
I.....	Acid.	1.020	Ring, 1/12 inch.	Negative.
II.....	"	1.017	" 1/12 "	"
III.....	"	1.025	" faint.	"
IV.....	"	1.022	" 1/16 inch.	"
V.....	"	1.022	" faint.	"
VI.....	"	1.030	" 1/12 inch.	"
VII.....	"	1.023	" 1/12 "	"
VIII.....	"	1.021	" 1/12 "	"
IX.....	"	1.024	" 1/12 "	"

In these cases Heller's nitric-acid test was employed. Nitric acid was poured into a test-tube, then urine was carefully added with a pipette, so that the urine formed an even layer above the acid. At the plane of contact a heavy white zone appeared, of varying widths. The reaction was still readily perceptible, except in the faint cases after the urine had been diluted twenty times with water.

None of the specimens showed any evidence of the presence of sugar, although they were examined for that purpose with Nylander's modification of Boettger's bismuth test. On standing twelve hours there was a heavy deposit in each case, and the microscopic examination revealed the presence of many urates, uric-acid crystals, oxalate of lime, and a large number of casts, some epithelial, a number of granular, and many hyaline casts sprinkled with crystals. The result of Heller's test was so striking that the urine of six players, excreted about three and one-half hours after the game, was examined.

Case.	Reaction.	Specific Gravity.	Albumin. Heller's Test.	Albumin. Tanret's Test.	Albumin. Millard's Test.	Sugar. Nylander's Test.
I.....	Acid.	1.025	Negative.	Present.	Present.	Negative.
II.....	"	1.030	Faint ring.	"	"	"
III.....	"	1.031	Negative.	"	Negative.	"
IV.....	"	1.030	"	"	Present.	"
V.....	"	1.029	"	"	Negative.	"
VI.....	"	1.026	"	"	Present.	"

In these six specimens albumin was detected only in one specimen with Heller's test, while Tanret's reagent showed a slight opacity in the other five. The deposit in these cases was also considerable, and on microscopic examination a few casts, largely hyaline, were found.

On November 18th specimens of urine passed immediately after the game by twenty foot-ball players were examined.[1] Every one showed the presence of albumin in considerable quantity; several after the urine had been diluted thirty to forty times, and one after the urine had been diluted one hundred times. In all the specimens casts were found; in some they were very abundant, and consisted of large and small granular, in other specimens of hyaline sprinkled with crystals, and in several of blood-casts. The microscopical examination also revealed the presence of many epithelial cells, an abundance of oxalates, urates, and uric-acid crystals, and in a few considerable blood. In all cases of casts no doubtful forms were accepted, and in more than two-thirds of the specimens two, and at times four, examiners agreed. In each case new cover-glasses and slides were employed.

[1] The writer desires to thank Mr. W. H. Conly and Messrs. Shaw and Sandford for their valuable assistance in the urinary examinations.

Case.	Quantity Passed.	Reaction.	Specific Gravity.	Albumin. Heller's Test.	Sugar. Nylander's Test.	Microscopical Examination.
I.....	Ozs. viij.	Acid.	1.018	Ring. 1/8 in.		Granular, blood, hyaline casts. Blood, oxalates, uric acid, urates. Esbach's test gave 1/10 per cent. albumin.
II.....	j.	"	....	1/16 in.		Granular, hyaline casts. Urates, oxalates, uric acid.
III.....	iijss.	"	1.022	1/10 in.		Granular, hyaline casts. Epithelial cells, blood, spermatozoa.
IV.....	ij.	"	1.020	"		Granular, hyaline casts. Blood, oxalates, uric acid, urates.
V.....	vijss.	"	1.020	Faint.		Granular, hyaline casts. Urates, uric acid, oxalates.
VI.....	ijss.	"	1.022	1/8 in.		Few hyaline casts. Blood, urates, oxalates.
VII...	vss.	"	1.025	1/24 in.		Granular, hyaline casts. Epithelial cells, oxalates, urates.
VIII...	j.	"	....	1/16 in.		Large and small granular casts. Oxalates, urates, spermatozoa.
IX.....	ij.	"	1.030	2/8 in.		Granular and hyaline casts. Epithelial cells, urates, oxalates, uric acid.
X.....	iv.	"	1.019	1/14 in.		Granular and hyaline casts. Many urates.
XI.....	vj.	"	1.019	1/16 in.		Granular casts. Urates.
XII.....	j.	"	....	1/8 in.		Many granular and hyaline casts, sprinkled with urates. Abundant urates and uric acid.
XIII...	iij.	"	1.024	1/12 in.		Many granular casts. Urates, uric acid.
XIV...	ivss.	"	1.025	1/16 in.		Many granular and hyaline casts. Abundant oxalates and blood.
XV.....	iv.	"	1.026	1/12 in.		Granular, hyaline casts. Oxalates, urates, uric acid.
XVI...	ij.	"	1.026	"		Many small granular casts. Urates, uric acid.
XVII..	iijss.	"	1.033	"		Many granular and hyaline casts covered with urates. Uric acid.
XVIII.	iij.	"	1.028	"		Granular and hyaline casts. Urates, uric acid.
XIX...	iij.	"	1.025	1/10 in.		Granular and hyaline casts. Urates, oxalates.
XX.....	ij.	"	....	2/8 in.		Many granular, blood, and hyaline casts. Considerable blood, uric acid, urates. Esbach's test gave 1/10 per cent. albumin.

Reaction in every specimen, negative.

These results exceeded by far anything that had been anticipated. That albumin may be detected in the urine after muscular exertion has been known for a long time, but never, as far as I can discover from my reading, has it been found in such quantities as here given. Then, too, the presence of casts of almost every kind in all the specimens examined, a condition which heretofore has only been associated with severe degenerated disease of the kidneys, overthrows a supposedly fixed clinical law—that the presence of granular casts in the urine always indicates renal disease. The fact that this condition cleared up in so short a time, that these men are all young, powerful, and healthy, indicates that the condition is a very transient one.

To explain, several theories might be advanced: First, that the albuminuria is due to the great concentration of the blood which occurs with this violent exertion, and that as the blood resumes its normal specific gravity the albumin no longer escapes. That albuminuria is attendant on the concentration of the blood is seen in cholera in which albumin, numerous casts, and renal epithelium are found in the little urine excreted. Hoppe Seyler and others have shown that the quantity of albumin that passes through a filter increases with the increase of the saline constituents. As the urine was much denser and the salts increased in amount, this would seem to offer an explanation for the condition found.

An attempt was made to demonstrate the correctness of this theory by examining, three hours after the game, the urine of two players who had refrained from drinking, the blood being then practically in the same concentrated condition as immediately after the game. Two other players were allowed to drink as much as they de-

sired, and their urine, passed three hours after the game, was also examined. The results, however, were negative. Of the players who had refrained from drinking, one showed immediately after the game only a trace of albuminuria, and none at all after three hours, while the urine of the other contained a trifle more albumin at the end of three hours than before. Of the two who were permitted to drink, one, who after the game showed marked albuminuria, later, after the drinking of six glasses, revealed merely a trace, while the other after drinking four glasses showed about as much albuminuria as before. The number of cases experimented upon was entirely too small to warrant the drawing of any conclusion.

The second theory is that the albuminuria is due to the acute mechanical congestion which ensues. The skin and the kidneys have many points of resemblance. They are both excretory organs, removing fluids and solids from the body, and are normally complimental to each other. When the kidneys do little work, as in summer, the skin does more, and *vice versa*. We also know that the external layer of the skin is all the time being insensibly shed and constantly renewed. If, however, the skin is forced to do additional work, as for instance in a Turkish bath, the external layer of the dermis, which before was shed invisibly is now cast off in large scales and flakes, *i.e.*, skin which would normally take a number of days in which to be shed is by this increased action cast off at once, leaving the skin after this great desquamation unimpaired. By analogy we are justified, I believe, in claiming that much the same process may take place in the kidneys. It is a natural inference that the epithelial cells of the Malpighian bodies and the uriniferous tubules are exfoliated, as, in various inflammatory conditions epithelial cells are present in the urine. It does not seem, therefore, a very great stretch of imagination to believe that under such conditions as prevail in football, epithelial cells might be carried off, albumin transude, casts formed, and then when the exciting cause had ceased to operate, that the organs would normally resume their function. An attempt was made to ascertain if any of the players had had scarlet fever in their childhood. But no such history could be obtained. Only a few men, however, were questioned in regard to their previous history.

Two practical questions now present themselves to us for solution.

1. Can such a condition be repeated twice or oftener a week without doing to the kidneys some damage which, although it may go for years unrecognized, will eventually lead to a serious renal change?

2. Is it not dangerous for men whose kidneys may have been weakened by previous disease, as scarlet fever, to subject themselves to such a violent strain?

Although I believe in the existence, under certain provocative conditions, of a functional albuminuria, and think that a fatal prognosis should not be rendered offhand simply from the occurrence of albuminuria, I would regard it a very great evil indeed if the knowledge of the possibility of functional albuminuria should lead anyone to carelessly view the presence of albumin in the urine. Our increased knowledge should lead us only to a more thorough examination which should embrace not only the genito-urinary system but also the entire body. Thus only shall we do no injustice to our patients either by treating as trivial what may be a danger-signal of the utmost import, or, on the other hand, unnecessarily alarming them about a condition which of itself may have no great significance.

239 Hamilton Street, Albany, N. Y.

The Sense of Smell is a faculty belonging chiefly to savage and primitive races, says Dr. Hermann, of Vienna, for man and house dogs have lost it almost entirely. It is more highly developed in the non-carnivorous than in flesh-eating animals.

PERFORATIONS OF THE NASAL SEPTUM; ETIOLOGY, CLINICAL SIGNIFICANCE, AND TREATMENT.*

By ADOLPH RUPP, M.D.,

NEW YORK.

Flattening or other deformities of the nose which have resulted from a defect or perforation of the nasal septum are met with only rarely by most general practitioners, and are not discovered very often by rhino-laryngologists.

Perforations and defects of the nasal septum are found oftener than the deformities to which they might be supposed to give rise to. Aside from all the possible cosmetic shortenings which these perforations or defects may induce, they are but rarely the cause of enough pain or discomfort to urge the patient to seek medical or surgical relief. And, no doubt, reasons such as these are sufficient to account and apologize for the material indifference of medical history concerning their existence and significance—an indifference extending over a period of more than twenty centuries. Indeed, it is only within the last fifteen years that perforations of the nasal septum have attracted scientific attention, thanks mainly to the investigations of Austro-German writers, Weichselbaum, Zuckerkandl, and Hajek, and clinicians in the United States, England, Germany, Switzerland, France, and Russia.

Most frequently these perforations and defects are discovered in the course of routine clinical work. They are usually associated with other nasal diseases, of which they may or may not be a result, or which they may or may not complicate; or they may have nothing at all to do with the pathological processes for which the patient is being treated, but are merely a mark of a process that has long since run its course. Sometimes, though rarely, they of themselves give rise to clinical phenomena which call for medical examination and treatment. Furthermore, they become of considerable importance, once their existence has been discovered, because the opinion which the examining physician or surgeon may form concerning their origin, will not be a matter of indifference for the patient's welfare, either individually or socially. The shape assumed by septal perforations depends on the pathological cause, as well as whether they be located in the osseous or cartilaginous portion of the septum. In the bony portion their form may be irregular, and usually is so; but in the cartilaginous portion of the septum they are nearly always round or oval in shape. As a rule they occur singly; but exceptionally two or more may be found together. Perforations of the osseous portion are very rare; and most of the septal perforations found are in the cartilaginous part. Either portion of the septum may be perforated without involvement of the other; and exceptionally, the perforation or defect may involve both.

Frequency of Occurrence.—McBride[1] says he has frequently seen perforations of the cartilaginous portion of the nasal septum "in the course of routine examination of patients for aural disease." Very few aural surgeons outside of Scotland can claim as much. This statement is no doubt what lawyers, with commendable exactitude, love to call an impression, and is not an indubitable fact. Zuckerkandl[2] found such defects eight times in as many subjects in one hundred and fifty autopsies. And in two thousand one hundred and thirty six autopsies, Hajek[3] found perforations and ulcers in various stages of development on the way to perforation, only thirty-three times, and that too after special search for them had been made. Turning from autopsy finds to clinical observations, it will be found that Max Schaeffer[4] (Bremen), in the course of ten years, saw only twenty cases of perforation of the nasal septum. And, after examining over two thousand nose and throat cases in the course of three years, at Vienna, Chiari[5] tabulated, under the heading of ulcers, cicatrices, and defects of the nose only seventy-

* Read in part at the October (1894) Meeting of the Charity Hospital Alumni Society, and the Laryngological Section of the New York Academy of Medicine, November 28, 1894.

seven cases, not a dozen and a half of them being perforations of the nasal septum. In ten of these seventy-seven cases a perforation of the septum was found without any sign of ulceration or necrosis at any other point within the nasal cavities. Jurasz,[6] in ten years' time, at Heidelberg, examined over four thousand nose and throat patients, and noticed perforation of the nasal septum in only thirty-seven of them, and then only once was the osseous portion found perforated. Hermet,[7] in the course of a discussion on this subject at a meeting of the Laryngological Society of Paris, asserted that perforations of the nasal septum are very rare in France. They are not of frequent occurrence in New York City. Taking eight annual reports of the New York Eye and Ear Infirmary (1874–80–84–85–87–88–89, and 1890), it will be found that ten thousand cases of nose and throat diseases were recorded, two thousand one hundred and nine of which were diseases of the nose. And only twenty cases of perforation of the nasal septum are recorded. During the year ending May, 1894, at the New Amsterdam Eye and Ear Hospital, four hundred and ninety-three cases of nose and throat diseases were examined, and only three times were perforations of the nasal septum recorded. There have been years at the New York Eye and Ear Infirmary when not a single case of septal perforation was seen. Certainly these figures prove this much—perforations of the nasal septum, though not of exceptional occurrence, are by no means common or frequent.

Sex.—Schaeffer found his twenty-two cases seven times men and fifteen times women. In this respect the experience of Weichselbaum, Hajek, Jurasz, others, and my own, has been the contrary, that is, about two to one in favor of males.

Age.—Jurasz found the ages of his patients ranging from ten to over seventy years. And Hajek found septal ulcerations and perforations oftenest in those between twenty and fifty years of age—that is, during the most active and most exposed period of life.

Side of Development.—Perforations develop from ulcers on either side of the septum, or from both sides simultaneously. Rossbach found their point of origin oftenest on the right side; but Hajek found it to be on the right side five times, on the left side nine times, and on both sides simultaneously six times.

My Own Cases.—During the past two years I have had, in private practice, seven cases of perforation of the nasal septum in my care. Five were men, and two were women. The ladies were respectively thirty-one and forty-eight years old. Two of the men were in the fifties, two in the forties, and one was eighteen years old. In five the cartilaginous portion of the septum was the site of perforation. In one case the bony portion only was perforated, and that was a case of very late tertiary syphilis. The seventh was a traumatic case, and the perforation involved both the bony and cartilaginous portions of the septum. Two of the cases were seen while still in the ulcerative stage, and several months before perforation at last took place. In these cases—the one syphilitic and the other non-syphilitic—the trouble began on the right side of the septum. The syphilitic presented extensive infiltrations over the right middle and inferior turbinated bones, and later on ulcerations, besides perforation of the hard palate. Necrotic pieces of bone were taken from the palate. The palatal trouble healed up quite rapidly. The cartilaginous part of the septum remained unaffected while the patient was under observation, and the trouble remained limited to the palatal and vomer bones. Infiltration and ulceration were much more marked in the right than in the left nasal cavity.*

* This man, aged fifty, at first denied ever having had syphilis; but finding his assurances disbelieved, he finally acknowledged having been treated for the disease while soldiering in Russia and Siberia twenty-five years ago. Within the last three years two of his infant children have died of hereditary syphilis. The one when nine months old, and the last when three weeks old. I saw the first child only twice before it died. This child was supposed by the parents to be sick with only diarrhœa. It had coryza, headache, and anal condylomata, besides a roseolaceous rash on the buttocks which shaded off down the thighs. Its life ended in convulsions. The last child was plump and apparently healthy when born; but soon it had a coryza and a sore anus, and it died soon of syphilitic marasmus. The mother nursed neither of these children. A girl six years old betrays none of the ordinary well-known signs of hereditary syphilis. The mother is a strong woman, and she states never had any miscarriages, etc.

In only one of the other five cases was it possible, from the character of the existing ulcerative process, to determine that in all probability the trouble began on the right side of the septum. The other three cases—not counting the traumatic one—presented perforations in such a perfect state of finished development, that it was impossible to say whether the perforations began on the right or the left side, or on both sides simultaneously. In the one woman the cartilaginous portion of the septum was bent into the left nasal cavity, but not enough so as to block up entirely the respiratory passages, and in this case it was plain the ulcerative process began on the right or concave surface. Once the perforation was associated with atrophic rhinitis and pharyngitis; once with hypertrophic rhinitis; once, as already mentioned, with extensive syphilitic infiltrations (syphilis nowhere else than in the nose, mouth, and throat) and ulcerations; and once the perforation complicated fracture and dislocation of the cartilaginous portion of the septum. Only two of the cases applied to be relieved from nasal symptoms that were directly due to the ulcero perforative process, which was limited, and on the cartilaginous portion of the nasal septum.

In the course of an interesting and instructive essay on bacteria and cocci in the nasal cavities, Doctor Jonathan Wright[8] says, "The day of theorizing has gone by. A theory now-a-days should be considered as little better than confession of ignorance"—mere words. With great truth has it been said that there are more false facts than false theories. The fallacies of a theory do not worry us much, and never for a long while. Life itself is theory, and we can no more escape from the necessity of theorizing than we can from the necessity of quoting others, unless we end by suicide. Such a thing as the "scientific imagination" has been spoken of by many scientific and unscientific orators, and in varying senses. As a not exact expression for the highest kind of mental activity, it may be allowed to pass unchallenged. All the sciences and all the arts owe much to it, and so does rhinology. The scientific imagination revels in attempts at unravelling the riddles that confront and puzzle us. It builds theories by combining the facts that are seen by all with those that are forgotten or have never been known before. It finds and marshals facts into their co ordinate places. It breathes life into facts that seem dead. It organizes knowledge and makes it all-powerful. And yet, as has been said over and over again for hundreds and hundreds of years, to quote Glanvill, "we *erre* and come short of science, because we are so frequently misled by the evil conduct of our imaginations; whose irregular strength and importunities doeth almost perpetually abuse us." A comparative study of rhinological writers on perforations of the nasal septum reveals to us that they have been and are thoroughly human, and that they have seen and reported facts often enough, only partially, not to say falsely; and they have not failed to build theories which have crumbled away under the grinding weight of time. And so, by the irregular strength and the importunities of the imagination—not because of any theory as such, however fallacious—writers who meant well have imposed on the often too ready credulity of those who must needs consult them for professional mental fodder, or ready-made opinion. Let us see:

Etiology.—The study of the causes of perforations of the nasal septum may be considered conveniently under five heads, namely: 1. Congenital or developmental influences. 2. Traumatisms. 3. Contiguous pathological processes. 4. Diseases that engender such constitutional and local conditions peculiar to syphilis, tuberculosis, lupus, scrofula, rheumatism, diphtheria, fevers, etc. 5. Local inflammatory and allied processes.

Congenital or Developmental Causes.—Hilderbrandt (anatomist) had a hole in the anterior portion of his nasal septum, which he considered congenital because he was not able to account for it in any other way. In the course of many years Hyrtl observed such perforations three times in anatomy subjects. He too considered them congenital in origin. Bosworth [9] quotes Schmiegelow as having seen a perforation which was believed to be congenital, and in which case a large portion of the cartilage was wanting. Without giving specific instances or references to such, E. Klebs [10] states, "roundish holes in the nasal septum are observed in fœtuses—the borders of these perforations are covered with a smooth membrane, and it has not been demonstrated beyond a doubt whether these holes are caused by some fœtal ulcerative process or by arrested development." And no less an anatomist and rhinologist than Harrison Allen [11] says, "Congenital defects in the nasal septum are apt to be multiple, and the septal opening to be associated with the presence of a hyperostosis in the roof of the mouth, or asymmetry of the facial bones." Congenital defects are, says Harrison Allen, as a rule in the cartilage, although they may be found in the perpendicular plate of the ethmoid bone. A case of congenital defect is quoted from Germs by Beely; [12] parts of the vomer in the child were missing, and the nasal cavities of both sides communicated. In this case the hard palate was very much arched, and thus in a manner compensated for the deficiencies of the vomer.

Traumatic Causes.—Bosworth [13] has seen perforations of the nasal septum result from injuries to the nose. In those cases splinters of bone (the vomer) ulcerated away and left a defect in the bony portion of the septum. My case, mentioned above, was a man over fifty years old, and the victim of a runaway accident. Being jerked from the carriage seat he struck his face against the pavement. The septal cartilage was dislocated antero-inferiorly into the right nasal cavity, and above into the left nasal chamber, besides being bent or broken longitudinally, the convexity of the cartilage jutting against the turbinated bone of the left side of the nose. The anterior portion of the lamina perpendicularis was fractured. A probe could be passed through from the right into the left nasal cavity, above and behind, near where bone and cartilage join. The dislocated and fractured parts were easily replaced and fixed by means of long and firm pledgets of absorbent cotton and borated gauze. The result is good. There is no visible external deformity, and there is no obstruction to nasal respiration. For four weeks after the accident a healing ulcer was seen at the point where the probe had been passed through the septum. The ulcer was seen longest on the right surface of the septum, where it had always been larger. The accident had caused much hemorrhage from the nose, and considerable flattening, besides a good deal of dizziness, which persisted for weeks afterward.

An interesting case of bullet traumatism mentioned by Löri,[14] may be quoted here: A soldier who had been shot years ago through the nose, the bullet having entered a little below the glabella, and, without injuring the hard or soft palate, penetrated into the pharynx, from whence it was expectorated. An irregular fleshy mass extending from the lower nasal passages away up into the attic of the nose, was found on both sides. At the posterior parts occupied by this mass of granulation tissue, the septum was found to be defective.

According to Harrison Allen,[15] imperfect surgical operations may give rise to septal perforations. Zuckerkandl [16] quotes a case from Velpeau, in which the operating surgeon put a hole through a very much bent septum which he had supposed was a polyp.

It is well known that certain barbarous people perforate the septal cartilage for the purpose of wearing decorative rings, and for purposes of religious ceremonies.

There is one other instance of septal perforation, alleged to be due to causes which are traumatic rather than anything else. I refer to Professor Bosworth's theory,[17] by which he not only explains the cause of nasal hemorrhages, but also the manner in which round or oval perforations are developed in the cartilaginous portion of the septum. The theory is simple enough, but so purely mechanical as to deny life to the septum, and reduce it to the grade of an inorganic partition without the power of reacting against injury. It is simply frictional erosion, sans ulceration, sans inflammation, sans constitutional taint. The theory is novel in rhinological and pathological literature. Cognizant of the eminence of the author, it is only just that he be quoted verbatim et literatim: "The most common cause of this perforation is to be found in the projection of the cartilage into one or the other passage, whereby its prominent portion becomes subjected to the current of inspired air, laden as it is with dust and other impurities, whereby a process of erosion is established, under which the cartilage is gradually worn away until an opening occurs. This is a purely local process, and involves no suspicion of a systemic taint. The existence of the erosion is attended with annoying crust formation over its site, causing a frequent picking of the nose, by which the process of erosion is much hastened. This process, as we see, is really a conservative effort on the part of nature to relieve the patient of an obstructive lesion in the nose, and one, moreover, which I have frequently seen attended with signal success, since the removal of the obstruction seems to be the primary effect of the process, while the establishment of a perforation is to an extent adventitious. I cannot agree with Zuckerkandl in the view that these cartilaginous perforations are due in a large majority of instances to an ulcerative or inflammatory action, in that the simple erosion in my experience is never attended with either of these processes." Reading all this simple talk of Bosworth's makes one think of a saying of Emerson's—"power and purpose ride on matter to the last atom." But it is all too good to be true. McBride criticises the theory quite mildly by calling its assumption of a projecting cartilage arbitrary. There are many points of cartilage in the nose that jut out into the current of inspired air, but they remain intact and are not filed away by the dust-laden impure wind; perhaps so, for the sole benefit of the operating rhinologist. Then, too, according to pathological specialists, an erosion is a superficial ulcerative and inflammatory process, in which the tissues that are being subjected to erosion are bereft of regenerative, but not reactive, capacity, because the destructive agents are slowly, but surely and continuously, at work (Weigert). Thus, this theory of Bosworth demands concessions that cannot be granted, for it seeks to explain a biological question by ignoring biological factors, and thus runs short of science, and becomes a mechanical mystery.

Contiguous Pathological Phenomena.—It is known that a rhinolith, or a polypus, may cause a perforation of the septum to take place, apparently by continuous pressure against the septum. Jurasz [18] reports having seen a case of each.

Influences Engendered by Constitutional Diseases, Scrofula, Lupus, Tuberculosis, Syphilis, Rheumatism, Diphtheria, Fevers, etc.—Scrofula, lupus, and tuberculosis, though related affections, and believed to have been such long before their consanguinity was accentuated by Koch's discovery of the bacillus tuberculosis, differ sufficiently in their clinical phenomena to justify the conclusion in the minds of very capable clinicians (Kaposi and Voltolini among others) that they are not identical maladies. They affect the mucous membrane and other tissues of the nose, and particularly the septum. They give rise to a catarrhal condition, to infiltrations, to tumors, and to perforations.

Scrofula: Maldenhauer [19] describes a septal perichondritis, due to scrofula, which ends in the formation of abscesses, and perforation of the cartilaginous portion of the septum. Sir James Paget [20] describes a similar condition. These abscesses may come on spontaneously, or a slight, under other circumstances indifferent, injury

to the nose may start them. The anterior portion of the septum is usually affected, and as a rule on both sides. Paget's description is: "Small abscesses form between the mucous membrane and the septum. With these the portion of cartilage beneath may be softened or ulcerated; and it may be perforated when similar circumscribed abscesses form on both sides of it; but when the pus is discharged there does not, I believe, follow any extension of ulceration in either the cartilage or the mucous membrane, and they heal leaving a small thin-edged opening in the septum." Maldenhauer's description differs somewhat from Paget's, being more acute and involving a larger area of surface; and patients apply for relief usually when the cartilage has become disorganized, and a perforation permanent. Maldenhauer states, what older writers have too, that the bony portion of the septum may become defective through scrofulous disease.

Lupus: Max Bender found the mucous membranes involved one hundred and seventy-five times in three hundred and eighty cases of lupus collected at Doutrelepont's clinique. In thirty-one per cent. of all cases the disease began in mucous membranes, which, says Crocker,[21] is by far more than is usually supposed. Only six times were the mucous membranes alone affected. One hundred and fifteen times the mucous membrane of the nose was involved. Crocker says that lupus is almost rare in America, and is seen less often in England than on the continent of Europe. It is more frequently seen in women than in men. Carl Seiler [22] says that he has never seen a case of lupus of the nasal mucous membrane. And Sir Jonathan Hutchinson [23] tells us that he has seen as many as three cases with septal perforation in one day. Such is the irregular run of practice. I have seen three cases of lupus in which the mucous membrane of the nose was affected, but in none of them* was the septum perforated. My friend Professor George T. Jackson† knows of about a dozen cases of nasal syphilis that had been diagnosticated as lupus. Two such cases, he says, had been operated on by competent surgeons who supposed that they were dealing with lupus. Mistakes of this kind, Jackson holds, only show that the differential diagnosis of syphilis and lupus is not always an easy matter. Ausspitz and Schuster, and other syphilographers, would agree with him. So much for the rarity of lupus, and the difficulty of recognizing it.

Medicine, especially clinical medicine, is still so imperfect in its methods of investigation and demonstration, that the name of a teacher often does duty for alleged facts or the validity of a theory. And sometimes such facts and theories are circulated by other teachers with their endorsement and commendation. At other times such facts become distorted, and the original teacher is falsely quoted, and approximate, not to say true, science comes short. In so far as lupus of the nose is concerned, this has been the case with the honored name of Kaposi. A number of respected rhinologists (Schech and Macdonald among others) have quoted Kaposi [24] as saying that the bones of the nose do not suffer in intra-nasal lupus. Kaposi says nothing of the kind. He simply makes no mention of bones when speaking of lupus of the mucous membrane of the nose. He does say on a previous page that lupus spreads via connective tissue, and that there are no grounds for asserting that muscles and bones directly succumb to lupus. Further on in this same article he says, concerning the bones of the extremities, periostitis, ostitis, caries, and necrosis, occur when no evident preceding inflammation or infiltration has taken place in the superjacent skin. Rosenthal [25] makes the general and unsubstantiated remark that it is an undecided question whether or not lupus affects the bones of the nose. Haughton,[26] Crocker, Schuster, and Ausspitz, and Klebs [27] affirm that the bones as well as the cartilage of the nose may become implicated in the lupus process and drop out. Kaposi says that the septum cutaneum is less frequently affected by lupus than by syphilis. He also observes, what others have remarked, that fungous lupous granulations may conceal a perforation of the septum.[28]

Tuberculosis of the mucous membrane of the nose is very rare, and perforation of the septum due to it much rarer. In sixteen hundred autopsies Williglk found four hundred and seventy-six tubercular subjects, and in only one of them tuberculosis of the nasal mucous membrane. It is believed that primary tuberculosis of the nasal mucous membrane has been observed, but such observations are not beyond question. Up to 1889, Seifert [29] was able to collect only thirty-eight cases of intra-nasal tuberculosis.

Greville MacDonald saw a case of tubercular perforation of the nasal septum (case 31, p. 339, Treatise on Diseases of the Nose); and others have reported similar cases. Such perforations exist in connection with other tubercular ulcerations, infiltrations, and tumors in the nose.

From the foregoing remarks on scrofula, lupus, and tuberculosis, it may be concluded that only very rarely can they be the causes of septal perforations. But that they do give rise to such perforations cannot be denied; and that even the osseous portion of the septum may be perforated by them must be allowed as a possibility. And however rare an eventuality they must needs be taken into account when the differential diagnosis of any perforation of the nasal septum is being considered.

Syphilis.—In 1885, G. H. Makenzie (Edinburgh) claimed, what many practitioners believe to be the case to-day, that perforations found in the septum are probably always symptomatic of syphilis; and McBride [30] stated, about the same time, in criticising Makenzie's claim, that most specialists (rhino-laryngologists?) look upon them with suspicion, but not as being pathognomonic of syphilis.

This is not an unimportant question. The gravest family complications may arise from the assertion that septal perforations are always syphilitic in origin. One of my cases, a lady engaged to be married to a lawyer, was told by me, that besides other troubles for which she was being treated, she had a hole in the septum of her nose. Innocently enough she told the lawyer of this, and he wasted no time in calling on me to have the significance of the perforation explained to himself. I could positively say that the hole had no particular significance, and had nothing to do with syphilis, hereditary or otherwise. Not only a patient's family and social group may be upset by the announcement of a mistaken diagnosis, but the physician or surgeon may come to grief because of it. Chiari [31] in his group of seventy-seven cases of "ulcers, cicatrices, and defects" of the nose, found sixty-two of these lesions caused by syphilis, five by lupus, four by scrofula, one by blenorrhœa, one by tuberculosis, one by diphtheria, and two were due to causes that could not be found out. These figures illustrate approximately the relative frequency of syphilis as a probable cause of perforation of the nasal septum, as compared with the possible etiological value of the other diseases already reviewed.

Syphilis, when it attacks the nose, like scrofula, lupus, and tuberculosis, shows a conspicuous liking for the anterior portion of the septum. In fifty-five cases of nasal syphilis recorded by Jurasz, thirty-one times the septum was attacked, and only once the bony portion. Twenty times in thirty-seven cases of septal perforation, syphilis was found to be the cause. Only in three cases out of sixteen of septal perforations could A. B. Thrasher [32] (Cincinnati) get an undoubted history of syphilis.*

Moritz Schmidt [33] would hesitate in calling a perforation syphilitic in origin if it did not involve the bony part of the septum as well as the cartilaginous portion. This assertion ignores much common experience, and,

* All women, two of German and one of Irish extraction.
† Oral communication.

* Dr. St. C. Campbell saw thirty-five cases of septal perforations—all in the cartilaginous portion, and their chief causes he believed to have been, 20 syphilitic, 9 anæmia, 5 ozæna, and 1 tuberculosis.—W. J. Swift (Lefferts) Reference, International Centralbl. für Laryngologie, etc., vol. viii., p. 9.

though it may be based on much individual observation, it would lead into many diagnostic and unfortunate therapeutical mistakes if depended on as a diagnostic mark. Bresgen [34] would have the favorite site of syphilitic ulceration (and consequently of perforation?) to be at those points where bones and cartilage unite. Kaposi [35] claims that the dormal, cartilaginous, and osseous parts of the septum may become perforated, and that syphilitic perforation will oftenest take place at the junction of the cartilage and skin portions. These observations may be supplemented by one of Bosworth's,[36] that "syphilitic ulcerations show a marked hesitancy in transgressing anatomical boundaries." All these observations are more or less true, but anybody with no very extensive experience will have learned that they must be taken and depended on with caution. Most perforations that are discovered are round or oval, but McBride [37] quotes Michelson who says that, "syphilitic perforations are usually longitudinal, and tubercular ones round or irregular." McBride neither denies nor does he confirm this assertion of Michelson's, he merely passes it on. Jurasz [38] tells of a case of perforated septum—cartilaginous portion—which had been published in the journals by another physician as being non-syphilitic; but which, from facts subsequently elicited, was believed to be syphilis after all, not, however, because of any particular shape of the perforation. Another interesting case reported by Jurasz may be referred to: A young man, aged nineteen, had luetic infiltrations on both sides of the septum. There were deep ulcerations besides, and the cartilage beginning to become denuded, necrosis and perforation threatened to take place. Iodide of potash brought about a comparative normal condition in a short while—the ulcerations healed and no perforation developed. A case of no less interest just because its history is somewhat indefinite, and reported by Dietrich [39] (Elbing), is instructive: Widow, aged forty five, moving in good society, whose husband had been an official. A nasal catarrh had been treated with questionable success by another medical man. Recently she had slight repeated nasal hemorrhages. In the cartilaginous portion of the septum anteriorly, there is now a perforation about the size of a half-dime. Its borders are irregular and dirty in appearance, with here and there small dirty-brown crusts. The ulceration bleeds when touched with a sound. There is a moderate amount of chronic naso-pharyngeal catarrh, but the breath is not fetid, nor is there any loss of the sense of smell. Syphilis not being suspected, the ulcerating perforation was looked upon as simple, and cure was thought certain within a short time. The ulceration was treated galvano caustically according to Voltolini's recommendations; but, instead of healing, the ulcerating perforation slowly but surely enlarged, and the nose had become slightly flattened. Syphilis was now looked for, but nothing pointing that way, except that the lady was childless and had aborted four times, could be found. She was given iodide of potash, and immediately everything prospered to a surprising extent. The ulceration began to heal, and finally cicatrized perfectly; and the chronic catarrh also improved very much.

These cases, aside from their intrinsic interest, offset the *obiter dicta* of the distinguished authors quoted a while ago; but in connection with Dietrich's case, a reflection from Sir John Hutchison [40] is worth remembering; even when there is a clear history of syphilis, "if the ulceration be slow, and without tendency to diffuse inflammation, or exfoliation of bone, it will usually be found that the internal treatment by specifics does very little good, while local treatment will cure."

May not a perforation have existed before syphilis was acquired? And, is it not a valid question to put, may not perforative influences work their effects, even while syphilis is doing its share of evil in the same body? A syphilitic history surely does not make all pathological phenomena syphilitic.

Rheumatism may give rise to septal perforations due perhaps to a rheumatic perichondritis. Mackenzie [41] refers to French journals on this head, and quotes a case from Roger: Young man, severe articular rheumatism and well marked cardiac symptoms, lost a portion of the cartilaginous septum, the size of a grain of rice, two months before he died.

Typhoid, typhus, and other fevers may give rise to ulcers on the nasal septum which end in perforation. But these are very rare and exceptional eventualities. Gelli [42] reported a case of a young man of sixteen, who, during an attack of typhoid fever had a good deal of nasal hemorrhage, from the beginning to the end. During the fever he emaciated very much. The nasal septum was thin. In this case the septal ulceration progressed, and perforation of the septum was the result; and all because, it was supposed, the patient picked his nose so much.*

Diphtheria gives rise to extensive intra-nasal ulcerations and even necrosis of the bones. Chiari reports such a case. This disease may just possibly give rise to septal perforations.

Carcinoma has been known to perforate the septum. Hajek [43] came across such a case. Metastatic carcinomatous deposit in the septum broke down and left a hole.

Local Inflammatory and Allied Processes.—In the course of his description of the sequelæ and complications of chronic coryza, Massei [44] says that ulcers develop under crusts deposited on the surface of the mucous membrane, and that this occurs oftenest in people whose labor obliges them to inhale air laden with irritating substances. He also avers that the lower turbinates are the common sites of this process, but that the same process may take place on the septum and perforate it. These ulcerations and perforations, says Massei, may affect the lamina perpendicularis of the ethmoid bone and the vomer, and that the lower anterior portion of the septum almost always escapes.† This may be true for Italian noses. Moritz Schmidt, on the other hand, locates the encrusting and erosive process at the anterior cartilaginous portion. Bresgen and others, ditto. J. Solis Cohen [45] has a description all his own under the heading of Chronic Coryza, and the sub-heading, Fetid Coryza, which reads (after mentioning that the disease having existed some years, destroying mucous membrane and bones), "so that the cartilaginous septum is in many instances found to have been pierced through, sometimes in one or two small perforations, but more frequently in a single large irregular hole, perhaps admitting the end of the little finger, or the end of a larger one, and looking as if it had been gouged out with some rude tool." [46] These two pictures of "chronic coryza" ‡ strike one as being made up of different and distinct diseases, are confused and exaggerated. They differ as to the location of the ulcero-perforative process.

D. Newman, of Scotland, and J. N. Makenzie, of Baltimore, Md.,[47] have found the anterior (cartilaginous) portion of the nasal septum perforated in laborers working in chromic-acid factories. Toeplitz, of New York,[48] examined thirty-nine laborers employed in a single arsenic (Schweinfurth Grün) factory, and found nineteen of them with perforations in the cartilaginous portion of the

* Dr. George F. Shrady has kindly given me permission to mention the following case of perforation of the cartilaginous portion of the nasal septum due to typhoid fever, which occurred in his practice years ago. The patient was a girl (the child of a friend), about ten years of age. The fever was of a prolonged tedious type, but the temperature of which never at any time went above 102⅘° F. About the fourth week of the fever, nasal bleedings occurred, and an ulcer was discovered on the cartilaginous portion of the septum. This was readily noticed because the child had wide and prominent nostrils. In a short time the ulcer developed into a perforation. Dr. Shrady is positive that nose-picking had nothing to do with causing the ulcer to develop into a perforation.

† Note to Massei.—On page 124 Massei has a section devoted to "simple catarrh," in which crusts develop on the anterior portion of the septum which irritate, and which in connection with nose-picking with the fingers result in ulceration and perforation of the nasal septum.

‡ Note to Cohen.—Both Cohen's and Massei's pictures refer apparently to the same mixed pathological conglomeration of diseases. It is proper to state that both M. and C. are cognizant that they are depicting mixed pathological conditions.

septum. Eight others who had not been employed for so long a time in this factory had ulcers varying in size and depth on the septum, apparently on the way to perforation. In none of these arsenic cases were the bones affected. Alexander G. R. Faulerton,[49] of England, found a hole in the cartilaginous portion of the septum (anteriorly) of a man who happened to be a cement worker. On this single observation speculations as to the rise and progress of septal ulcers were based that have been quite generally adopted, even by Zuckerkandl, as though Faulerton's assumptions had the sure basis of comparative statistics and wide discriminating observation. He stated, without giving any proofs, that such septal perforations are found often in cement workers. So much made "sure," a "rationale" was easy to manage, and thus: Cement dust causes rhinitis; then formation of crusts; irritation from these which is relieved by picking at the nose, then ulcer in consequence, finally further nose-picking, until ulcers become perforations. This is simple, but all on the surface, and leaves much out of account. However, R. Otto,[50] of Dorpat, Russia, after having examined thirty cement workers, found only one who had a perforated septum.

The number of people who bore about in their noses is very large, and yet in comparison how few septal perforations are discovered. No doubt after an ulcer has been started, whatever the cause be, digging about in the nose may accelerate a progressive ulcerative process. As a rule, people do not hurt themselves when they can avoid it, and when picking into the nostrils for the removal of crusts or for counter irritant effect, hastens or favors perforation, some grave pathological change in the septal tissues may be assumed. Normally the mucous membrane heals very rapidly and thoroughly, and when it will not do so something is wrong with it, and the rhinologist will not use his drills, chisels, saws, scissors, knives, and cauteries. Surely picking at the nose does not determine tuberculosis, scrofula, lupus, and syphilis to seek the cartilaginous septum for ulceration and perforation. Furthermore, do not catarrhal ulcers so-called heal in spite of nose-picking when they occur in healthy people? Yes. Perichondritis and abscess of the septum not due to scrofula, Friedreich[51] said, almost always end favorably, and without leaving deformity of the nose. But Wunderlich[52] and Duchek[53] affirmed, in a general way, that those affections may leave a perforation of the septum or destroy it entirely, and leave the nose flattened and deformed. These processes may obstruct the nasal passages partially or entirely, they may affect only one side of the septum or both sides, they may be located high up and posteriorly, or inferiorly and away to the front. So said Wunderlich. These observations have been confirmed by rhinologists of our day, and from cases that they have reported, I shall refer to one of D. Bryson Delavan's.[54] An otherwise healthy girl, sixteen years of age, had a very severe septal perichondritis and abscess on both sides of the septum, and perforation took place near where the bone and cartilage unite. After proper treatment the perforation closed up and only a scarcely noticeable amount of flattening remained. Whether or not oval or round openings of a permanent character remain after the acute symptoms of these maladies have subsided, it is impossible to affirm positively.

Theodore Harke,[55] in his post-mortem examinations, came across an interesting case of facial erysipelas and hemorrhagic naso septal lesion that may be mentioned here. Erysipelas affected the right ear and the face. The mucous membrane of the nose was generally red and congested, and covered with muco-purulent masses. Under the mucous membrane and perichondrium of the left side of the septum, a diffuse hemorrhage had taken place, involving all the cartilaginous and one half of the bony portions of the septum. There were no signs of abscess formation. The covering mucous membrane was of a dark-greenish color. Would necrosis and perforation have followed in this case if the patient had lived? It is possible.

Perforating Ulcer of the Nasal Septum.—Weichselbaum, Voltolini, Sir J. Hutchison, Sir James Paget, Jessop, Hajek, Zuckerkandl, Rossbach, Freudenthal, and others, have reported cases of perforating ulcers of the nasal septum. Analogically, they have been compared to perforating ulcers of the foot and those of the stomach. All authors agree that they have necessarily nothing to do with syphilis or tuberculosis. The majority of German writers opine with Weichselbaum and Hajek, that they are a local affection due to parasites. Taking all the developmental theories and their shortcomings into account, one may conclude that the real or essential causes of perforating ulcers of the septum are unknown, or else a number of various causes and influences have to do with their origin and development.

These ulcers are found in people who have neither syphilis nor tuberculosis. They are found in people who have died of tuberculosis and were suffering from tertiary syphilis. They have been found in those who have had syphilis; and in those in whom syphilis is active. One-third of Hajek's [56] cases of septal perforations were tubercular subjects, and all of Weichselbaum's [57] sixteen cases had succumbed to tuberculosis. None of my five cases were tubercular. These perforations may vary in size from that of a lentil to that of a twenty-five cent piece. Usually there is only one, but two and more have been observed in the same septum.

Their pathological history may be divided into three stages: A preparatory, an ulcerative, and a perforative stage.

As to the first stage, a number of opinions, none of them even similar, have been advanced. A favorite opinion is hemorrhagic, after some manner or other. Voltolini [58] fancied that hemorrhage from some ruptured venule or arteriole was the origin of the progressive ulcerative process, with the vesicular or arterial break as the centre of ulceration. Nasal hemorrhages are very common and frequent, and usually from the septum; but septal perforative ulcers are rare and uncommon in comparison. This theory of Voltolini is a mere guess; and Voltolini did not think of explaining or guessing at the tissue changes in the vessels that must precede the vesicular break and predispose it to spread peripherally, nor did he enlighten us about the causes that must be at work after the ulcer was progressing, nor finally by which influences it was stopped short. These ulcers begin on both sides, at symmetrical points, simultaneously sometimes; and, in such cases we should be obliged to assume like conditions on both sides. And nobody ever saw such a condition of affairs.

Dietrich's [59] theory is an advance on the logic of Voltolini. He posits that the nasal septum is very vascular and the circulation slow, and thus prone to thrombotic and depraved local nutritive troubles. If injury to the mucous membrane like that caused by nose-picking starts an ulcer, then the succeeding steps of the progressive ulceration, it is supposed, are easily imagined. And that is not the case. This theory, too, ignores many antecedent and post-ulcerative influences. Dietrich holds that the presence of bacteria in the ulcer is accidental and not essential or causative.

Zuckerkandl [60] has given us the most elaborate and plausible of all the hemorrhagic theories; but his theory is weak and comes short of science, because it does not in most instances cover clinical experience. After long mechanical injury of some kind, as boring about in the nose with the finger or inhaling irritant substances, hemorrhages into the mucous membrane take place, and at last a condition known by him as zanthosis is developed. The mucous membrane assumes a yellowish appearance and has become atrophied. The blood vessels have in the meantime undergone degenerative changes. If bacteria and cocci now get a chance to invade the parts, they overcome tissue resistance so successfully that perforation quickly follows ulceration. Most cases of perforating ulcer reported by clinicians have not shown up that way. At any rate, my five cases did not.

Rosenfeld's[61] (Stuttgart) theory is not hemorrhagic, but neuropathic. It is traphoneurotic; and it is peculiar because he locates the ulcers so high up as to be out of the reach of the finger nail, and from the fact that he claims to have seen these ulcers develop from within outward; that is, it is said that he has seen cases in which perforations developed under necrotic mucous membrane. This theory hobbles along without the help of germs, primary degenerative vascular changes, or sinister hemorrhages, or finger-nail pickings, or finger-nail toxic local infection. This theory, too, accounts for but little that clinical observation uncovers—it is but a match struck in the dark, and just lets us know how dense the darkness is.

And now for the bacterial theories. Frankel's[62] opinion respecting parasites carrying havoc and destructive ulceration, and finally perforation, into Jacobson's organ, runs counter to so much clinical experience, that merely to be mentioned is about all the attention it deserves.

Hajek's theory also limps. As the first step he finds a limited area of mucous membrane, or dotlets thereof, discolored a dirty gray, due to the formation of a pseudo-membrane and degeneration of the epithelium. There is nothing passive about this discolored spot. It is destructively active, and it is assumed that the greatest amount of activity is at the central parts. The membrane becomes disorganized, and makes room for the ulcer, which has sharply defined borders. This ulcer shelves off toward the centre, where it is deepest. In time the ulcer becomes something like a terrassed cone—the point at the centre, and its base bounded by the borders. At the beginning of the ulcerative period detritus of pseudo membrane and coagulated blood may be found hanging to the surface of the ulcer or to the borders. Later on muco-purulent crusts may form over them and hide them, but the destructive process continues; and scarcely ever is this known to the patient. The mucous membrane, the perichondrium, and the cartilage having become perforated, healing may set in and become complete by leaving a thin tapering-edged hole in the septum. Possibly healing may take place before the perichondrium has become implicated, but if this does occur, it does so for reasons unknown. Often these perforations are seen with their edges still ulcerating at points, and necrotic cartilage jutting beyond the mucous and perichondrial coverings of the septum. Before complete healing has become established, it is said the mucous membrane may or can be lifted from its subjacent tissues, and the perichondrium from the cartilage. This could not be done in any of my cases. This malady does not go on without some reaction at or near the borders of the ulcer, and around the blood-vessels; but for the most part the process, taken as a whole, simulates a local gangrenous process. And all these changes, say Weichselbaum and Hajek, are caused by bacteria and cocci; especially, according to Hajek, to streptococci pyogenes and staphylococci pyogenes aureus. Those cocci do not wander away from these foci of ulceration, but continue to play high jinks there until perforation has taken place; and the edges of the perforation having become healed, they

> "Fold their tents like the Arabs,
> And as lightly steal away."

These ulcerative perforations constitute a disease sui generis—a specific disease, and says Sir James Paget, "the definite shape (of the perforation) may be a characteristic of their being due to parasitic influence, just as are the definite shapes of parasitic diseases on leaves." However all this may be, neither Weichselbaum's nor Hajek's bacteriological investigations have disclosed anything of a specific nature. The clinical significance of what has been said concerning perforations of the nasal septum may be summarized by saying that they vary according to their etiology and pathology:

1. Congenital or developmental perforations are extremely rare; and, if we must believe authorities, they are of two kinds at least: (*a*) Those due to perverse or arrested development, such as are hinted at by Harrison Allen, and of which Germs' case is an instance; (*b*) those due to a pathological process implanted on the developing tissues, such as are hinted at by Klebs, and which a number of observers believe they have seen. Concerning this field of observation we know positively very little, and large opportunities here await the scientist.

2. Perforations due to severe direct violence, and contiguous pathological processes must tally with the injury received or the growth giving rise to them. These also are rare occurrences.

3. Perforations due to constitutional influences are usually accompanied by the signs and symptoms peculiar to those diseases, respectively, while the perforation is developing. Besides, the various local manifestations of the respective constitutional diseases crop out at other points of the intra-nasal mucous membrane, although that of the septum is a favorite site with all of them. They very rarely develop septal perforations, and when they do, other manifestations, peculiar to any special one of them, show up with the perforation. In most cases even syphilis is no exception to this last remark; although syphilis may leave a perforation which bears all the marks of the so-called "perforating ulcer of the nasal septum," according to Jurasz and other observers. However, the clinical history, and a course of experimental therapeutics, will differentiate them when any doubt as to their respective character exists. The mere existence, however, of a history of syphilis in a patient is not positive proof that the perforation has been caused by syphilitic influences.

4. Purely inflammatory affections of the septum—perichondritis and abscess—may give rise to perforation (even to the extent of nearly half an inch in diameter, as in Delavan's quoted case) during the inflammatory process, but the defect is apt to heal up again with more or less or no deformity. It may be just possible for a typical roundish or oval perforation to result; but whether such have been seen is not certain.

5. Most perforations that are discovered by many observers are almost always found located in the cartilaginous portion of the septum, and are roundish or oval-shaped, their long axis being parallel with the long axis of the cartilaginous portion of the septum. According to the majority of observers, they have nothing to do with syphilis etiologically in most instances. They are in most instances probably purely local gangrenous manifestations, possibly due to bacterial influences, possibly due to local tropho neurotic causes, possibly to a combination of many causes; but the true nature of this disease still remains to be discovered. There has been nothing wrong with the mucous membrane or the other intra-nasal tissues beyond the ulcer or ulcerating perforation, in many of the cases that have come under observation, according to the testimony of a number of authors.

Therapeutics.—Patients with ulcerations on, and perforations in, the nasal septum, when these lesions are not discovered casually, come to be relieved from the nasal discomfort caused by crusts blocking up the nasal passages, etc.; or they come to have small intermittent nasal bleedings checked; or else, in rare instances, on account of whistling noises which occur when the air is quickly or forcibly inspired, and such cases have been observed by Bosworth, L. Bolton Bangs, Hutchison, Jessop, and others.

The successful treatment of ulcers demands, first of all, that the causative pathological influences be done away; and next, that the best favorable conditions be established, with local and general remedies, for aiding the recuperative forces of the local tissues to cover the losses they have sustained. When this is not or cannot be done, cure will be impossible.

The aggregate experience of all observers allows the conclusion to be drawn that simple perforating ulcers and perforations cannot always be differentiated, by

appearances, from those developed by syphilitic influences. When this happens, specific treatment with mercurials, and iodide of potash, etc., will, so far as is known, clear up the diagnosis. The syphilitic ulcerations will heal under the influences of the specific drugs that have no appreciable effect on the simple perforating ulcer. Although simple perforating ulcer of the nasal septum has a stage of growth and development that prepares local conditions which favor subsequent ulceration and finally perforation, its therapeutics, unfortunately, cannot be considered after any such methodical manner. Our present knowledge of this malady obliges us to follow up the process by attacking it with only such general empirico-clinical remedies which have been found effective in other cases of tissue destruction of a non-specific character.

Freudenthal [63] reports the case of an otherwise healthy girl, twelve years of age, who came to him to be cured of persistent epistaxis. On the anterior portion of the septum a dirty grayish-white patch or deposit was discovered, besides some superficial ulceration. The borders of this ulceration were found to be congested. These finds were considered typical of the early stages of simple perforating ulcer. The remedies applied were mild astringents, which and in what strengths are not mentioned. Freudenthal saw the case only four times, and, when last seen, the ulcer seemed to be doing nicely, and, the patient not returning again, the doctor concluded that the ulcer must have healed. All of us may not concur in the diagnosis nor accept the assumed therapeutical optimism. However, a case of mine, already referred to, will not be out of place alongside of this one of Freudenthal's: A young man and student, aged eighteen, quite a cigarette smoker, came to me on account of bleedings from the nose, besides (right) orbital pains that radiated from the nose. Examination revealed a flat triangular ulcer on the anterior portion of the right side of the septum. The ulcer (very superficial) was about the size of a three-cent piece, with sharply defined borders that were not particularly congested or swollen. Its surface was very finely granular, but did not bleed when touched with a probe. There was some hyperæsthesia at and near the borders, but not over the surface of the ulcer. There were no crusts, nor pseudo-membranal detritus, nor dried blood on or about the ulcer. He admitted that he picked his nose, but only to get rid of crusts; and then his nose would bleed, after which the orbital pain would subside considerably. This young man was not strong and robust, but not any more anæmic than one would expect to find in a person confined to rooms. He complained of malaise which might be attributed to tobacco or malaria. There was a slight amount of naso-pharyngeal catarrh.

To the ulcer itself I applied a scruple to the ounce solution of nitrate of silver; and to the nose and pharynx a three-grain solution of the same metal. Internally he was given

Ext. nux vomica,	
Ext. hyoscyamus	āā gr. ½
Quinine sulphate	gr. iij.

four times a day. He was given general and local advice, and

Hydrarg-rub. oxidi	gr. v.
Vaseline	ʒ j.

M. Ft. unguentum,

to be applied to the ulcer. Two weeks later I saw him again. Generally he felt better. Locally, appearances seemed better, although the ulcer had not diminished in size; it had not bled because crusts had not formed as often as had been the case before, and besides he had not been tempted to pick at his nose as often. The orbital pain was still present, but came less often, and was not nearly so severe as it had been. He now went off on his vacation to the mountains.

The ulcer was thought to be simply catarrhal; and its size was attributed to the finger-nail injuries. There was no sign of zanthosis here, nor interstitial hemorrhages, nor pseudo-membranal deposits, nor varicosities. I hoped with better air, more exercise, etc., the young man would return to his studies in the fall with an intact and sound nasal septum. But when he returned, several months later, I was surprised to find an oval perforation in the septum, and other typical appearances. During his vacation his nose did not trouble him in any way. At places the mucous membrane had healed over the cartilage, but at other points the necrotic cartilage jutted beyond the perichondrium and mucous membrane, and the tissue struggle for cicatrization was going on. This condition of affairs reminded me of a case of gangrene of the auricle in a child that I had treated at the New York Eye and Ear Infirmary. This gangrene originated from chicken-pox. And here, too, the cartilage (necrotic, of course) jutted beyond the limits of the skin and perichondrial tissues.

For hastening the process of cicatrization in these cases, scraping away necrotic tissues, and applying nitric acid have been recommended and practised by Jessop. Others have used the solid nitrate of silver. Sir J. Hutchison has used and recommended the acid nitrate of mercury. The electro-cautery was recommended by Voltolini and others. Hutchison [64] also used the yellow oxide of mercury salve. Whatever active treatment in the way of curetting and caustics is resorted to, too much irritation and destruction of nutrient tissues (mucous membrane and perichondrium) must be scrupulously avoided. And even then, in spite of careful constitutional treatment and observant local care, this healing process will sometimes continue to remain tedious, and even refuse to heal; because we fail to influence the cause, of which everybody is, as yet, ignorant.

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HINTS ON THE TREATMENT OF ECZEMA.

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In giving the treatment of different forms of eczema, a classification according to its etiological factors and a short and concise description of the different forms so classified, will assist us materially.

Eczema is a word applied to a class of skin affections of which we know too little. The definition given by most of our standard authorities is, that it is a catarrhal inflammation of the skin producing a multiformity of lesions, papules, vesicles, pustules, etc.

With an eczema we should have in some part of its course a discharge of some character, either serous or pustular. The term is one that has been and is too widely used to express conditions which do not fill all that the definition requires. A thorough knowledge of the pathology of many of the so-called eczemas, I am sure will take from this wide cover-word some of its oldest occupants, and give us a more exact and practical knowledge.

Eczemas are popularly divided into acute and chronic, and subdivided into papular, vesicular, or pustular, according to their clinical and objective symptoms. They are also named from their location and manner of progression. This classification gives us some forty different forms. Of course such terms are very well for methods of description and give us an exact idea of the condition and its appearance. Yet for one who is not familiar with all of these technical terms, it is bewildering and confusing; so for matter of convenience, of the moment, I will give below a simple classification according to the etiology, and try to give in a few words a description of the different forms.

In treating an eczema or any pathological condition of the skin, one must not forget that it is an important and active organ of the body; having its work to perform, through its glands, vessels, and nerves, as the liver or kidneys. It is an excretory organ of the greatest importance.

Again, one must remember that it is subject to all the external influences, heat and cold, irritants both organic and inorganic. No portion is free from organisms. If scrapings be taken from any part of its large surface and examined, cocci and bacilli will be found in great quantities. Therefore in treating and observing the condition and course of an eczema, we must take into consideration all of these influences. Many of the complicated appearances of an eczema are produced by calling into active life some of these many organisms, as the catarrhal inflammatory condition gives them soil and food for growth and development, while some internal derangement may be at the same time producing these suitable media. Again the eczema may be alone caused by the organism or organisms having been brought into activity or contact with the skin from unknown external causes.

We will divide eczema into two general classes, any form may of course be acute or chronic, according to the duration: 1. Neurotic eczema. 2. Irritative eczema; *a*, caused by irritants or poisons from within the body (internal); *b*, caused by irritants or poison from without the body (external).

As was said before, to conform to our standard definition of an eczema, one should have a catarrhal inflammation associated with papules, vesicles, or pustules. The so-called trade eczemas are from traumatic or chemical influences and should be classed with the dermatites.

In giving the above division we do not, of course, include all the varieties in an exact and precise manner, but for the purpose, as to hints for treatment, it will suffice.

1. Neurotic eczema is a catarrhal inflammation of the skin produced by reflex or neurotic causes. It is symmetrically distributed, more or less in the course of the nerves, has marked exacerbations and remissions. Occurs mostly in children, but affects also adults. The disease is typically eczematous, the papules forming quickly into vesicles, which easily rupture and discharge freely. The crusts are very thick and tough, as the serum seems to quickly dry, covering the surface. The disease occurs more or less in patches, of varying size from that of an inch in diameter to the covering of a whole limb. The patches are rather sharply defined with vesicles and papules at the periphery. There is great pruritus, and from inoculation by the scratching the crust soon becomes very black, from the dirt and organisms. If the crusts are removed a weeping, inflamed surface is exposed, but the discharge again rapidly crusts. The pus organisms seem to find favorable soil in the discharge, as one often sees punched-out ulcerations on removing the crusts.

It may be located anywhere upon the body, but usually seeks the external surfaces of the extremities, and the head and face. In children we see it located mostly on the face or head; occupying the cheeks, chin, but leaving peculiarly the region immediately around the mouth perfectly free. There is a very little thickening of the skin, as it can be pinched up easily if the thick crusts are thoroughly removed. I think here the crusting and scaling is quicker than in any other form of eczema. We have though in adults, in the nervous and debilitated with cold and clammy hands and feet, a form of neurotic eczema, whose only exhibition is a few transient vesicles very itchy and troublesome, with possibly a little scaling.

If each case of a symmetrical eczema answering to the above description be carefully studied, one will find exacerbations and remissions occurring with some derangement of the health, maybe only some slight thing, but will act powerfully reflexly.

I have seen many cases where the eczema will clear up on the cutting of a tooth; when another is forcing itself through the gums a fresh attack will occur. In children it occurs with the numerous bowel disorders, diarrhœa or constipation, with indigestion. Cases have been cured by thorough stripping of an adherent prepuce or circumcision, the adherent prepuce and retained smegma causing violent reflex irritation. I have now such a case under observation, which has entirely recovered after circumcision, without any local treatment whatever. In women we have the disease occurring with the menstrual flow, and with ovarian troubles.

It is of course often very difficult to find the cause of the reflex irritation, but in a catarrhal inflammation of the skin, symmetrically distributed over the body, with papulæ and vesicles which quickly discharge and crust we should look for a cause of reflex irritation, which may be one or more of the many disorders that affect the economy. Such should be looked into and treated as they generally are, using such remedies on the skin as will reduce the itching, influence the vessels, prevent crusting, and render the subjective discomfort of the patient more endurable. In other words, use sedative astringent applications as in any acute or subacute eczema. (Dr. Dyer, of New Orleans, and Dr. Barham, of Pittsburg, have written some interesting papers on neurotic eczema; the former on the disease in children and the latter in adults.)

2. *Irritative eczema* is a catarrh of the skin produced by poisonous or irritative influences: (*a*) from within the body, as those occurring in Bright's disease; in rheumatism and gout; in cirrhosis of the liver and other hepatic diseases; in ptomaïne poisoning and disturbances of the chylopöetic system.

(*b*). From without (external), which are parasitic in origin.

(*a*) It would be very difficult, moreover dogmatic, to draw a sharp line of clinical difference between the first subdivision of irritative eczema and that of the neurotic type, yet I think there are certain points which are distinctly different and assist one to a proper etiological diagnosis.

How the irritant or poison acts in being excreted, I am unable to say, but that such poisons do cause eczematous conditions clinical experience teaches every day. The skin being an active execretory organ, is inflamed and irritated generally, or in certain parts by these pathological products.

This being the case we, of course, would expect to find the disease occurring at points of active secretion, which is generally so, but I believe external irritation, mechanical or chemical, is a most important determining factor; the skin being in such a condition from the constant irritation of these poisons that the slightest violence to its texture will cause an outbreak of an eczema. In many cases we find it occurring on the instep or ankle, from irritation and rubbing of the shoe where ordinarily such irritation would cause no disturbance whatever. Again, it is frequent on the neck from the collar or shirt. In like manner in any situation that may be subject to irritation; the scratch of a pin or prick of the nail causing or starting an outbreak, which may slowly extend over the whole or part of the body, the action of the deleterious products remaining the same.

The clinical symptoms of an eczema so produced are not widely different in their ensemble from one of the neurotic type, yet there are some characteristic features which point to its proper diagnosis.

The disease may occupy any portion of the body; it is indolent in character, the inflammation starting with mild burning and itching, gradually increasing in intensity to papulation, vesiculation, and weeping. The outbreak is not acute and violent, covering large areas at once, as in the neurotic type. The patches are not sharply defined but shade off into the apparently healthy skin. The itching is of moderate intensity. The impetiginous element is very rare, as the discharge does not seem to be as suitable for the propagation of the organisms as in the neurotic, in which we find thick, dirty, pustular crusts.

Crusting and scaling is not so marked, the crusts being thin and moist, of yellow color and easily detached, leaving a reddened weeping surface. There is generally thickening from the beginning, which increases more rapidly than in any other form of eczema. The inflammatory changes here are deeper than in other forms, and there is a greater cell diapedesis and infiltration. The infiltration gradually shades off into the healthy skin, and can always be readily made out; in fact, the whole tendency of the process seems to be toward a subacute or chronic type.

The principal points of difference between this and a neurotic eczema, are: (1) The location, not following at all the course of the nerve distribution. (2) The patches are not sharply defined, but gradually shade off into the healthy skin. (3) The subjective symptom is more of a burning sensation than an itching. (4) The crusts are yellow, thin, and moist, not dry and thick. (5) The skin is found to be infiltrated after removing the crusts. (6) The indolence of the process. (7) It is found most frequently in adults, and those who have passed middle life.

The treatment of such inflammatory conditions should be both internal and local.

The history of the patient should be carefully inquired into and a thorough examination made of the general health. The urine examined for albumin, casts, and sugar, for urates and uric acid, etc.; any abnormal constituents being carefully noted.

In old drinkers we find cirrhotic changes with probably albumin in small quantities, with casts. In the rheumatic and gouty, highly acid urine with full, excited pulse; often such individuals will predict a crop of eczema by the color of their urine, noticing it to be highly colored and "burning." In the later cases of Bright's disease, where little urine is passed, and the kidneys thoroughly inactive, we often see very severe cases of eczema. I remember three cases of Bright's where death occurred after a violent outbreak of eczema.

It would be useless here to go into a *résumé* of the treatment of gout, rheumatism, and Bright's disease, for I merely wish in connection with this form of catarrhal inflammation of the skin, to point out the importance of careful research into the general health of the patient.

(*b*) The second subdivision of our irritative eczemas, that is, those caused by the effects of external irritants, is comparatively a new field in dermatology, and one which promises much for the future.

With this class are included the parasitic eczemas. As was said before, the so-called trade eczemas should be classed with the dermatites and not here. Although, as in many other diseases, the parasites for these several conditions have not been isolated, yet there are sufficient clinical reasons for treating them from a parasitic stand-point, and often be surprised with the happy and rapid results.

In this class would be included the eczema seborrhicum of Unna, who, in 1887 read a paper before the Congress of Washington, demonstrating this affection, beyond a doubt, to be a catarrhal inflammation of the skin, probably of parasitic origin, and showing the erroneous ideas of the old masters in relation to the so called seborrhœas. From further study and research Dr. Unna is more convinced of the correctness of his observations in this matter, and also of the parasitic origin of eczema seborrhicum, believing his Morrorcocci to be the specific cause, as he finds them in the scales and horny layer of the diseased patches. The disease begins as a pityriasis of the scalp, which may have existed for years, extends down over the face, neck, or it may invade any portion of the body, but a pityriasis or "dandruff" of the scalp will always be found accompanying it. The eczematous patches may vary from a small, greasy, scaly, yellow patch to one of intense weeping, with highly marked inflammatory symptoms.

The disease is generally characterized by well-defined patches, varying in size, with abrupt borders. The patch is covered by yellow, greasy scales, which are easily detached. It spreads peripherally, clearing up somewhat in the centre; therefore one or more patches may coalesce, forming patches of various shapes. Its favorite location is the neck, face, back, and chest, but may occur in any portion of the body. There is not much itching except when the patient is overheated. The disease is generally superficial, with no marked thickening of the skin, but often there are patches of infiltration resembling a psoriasis lesion.

Another type of parasitic eczema to which I can only here briefly refer, is a form that was first pointed out to me by Dr. George T. Elliot, of this city. Since then I have studied the condition closely, and thoroughly agree with him in considering it of undoubted parasitic origin and differing markedly in its clinical appearance from the eczema seborrhicum of Unna.

The majority of cases that I have seen occur in varicose conditions of the legs, and an eczema here, we all know, to be of a very stubborn and persistent character. These cases, which have existed for years under soothing applications, internal medication, and bandaging, I have seen markedly benefited and cured by active parasitic remedies. The leg is, of course, subject to other forms of eczema, but I have found the parasitic vastly in the majority, from the non resisting powers of the cells of the leg in those past middle life. Again, it is very frequent in those whose hands are frequently exposed to water, in housewives, working-girls, barkeepers, waiters, etc.

The disease occurs as an undermining of the epithelial layer, a splitting or peeling up of the epidermis, with few papules or vesicles here and there, all enclosed in sharply defined patches.

The intensity of the process and the objective symptoms depends, of course, somewhat on the activity and amount of the poison; on the location and on the peculiar idiosyncrasy and susceptibility of the individual. Therefore we may have a sharply defined patch of the disease, with only slight scaling and a peripheral undermining and splitting up of the epidermis, to an intensely inflamed one, raised slightly above the surface, deeply red, with hemorrhage into the follicles, and the characteristic progression by splitting up the horny layer at the borders.

The disease though as usually seen consists of well-defined red patches, varying in size, slightly scaly, dotted here and there with papules, but with relatively few of the latter. The borders sharp, and if closely noticed the horny layer will be found to be loosened, peeled up, and can be pulled off in large, thin laminæ. There is very little itching or burning. The patches spread peripherally, several may coalesce, but there is generally only one or two in a locality, the disease spreading from these over a leg or arm in a more or less serpiginous manner. The milder cases have a tendency to heal in the centre leaving a slightly yellow pigmentation. The whole affection, as usually seen, is very dry and only slightly scaly unless it is greatly inflamed.

The favorite location is the hands and arms, legs and feet, the face, as these portions of the integument are more exposed to external influences. But I have seen the disease generally scattered over the whole person in small, sharply defined red patches. It can readily be differentiated from eczema seborrhicum by 1, the color of its patches, which is decidedly red, while that of eczema seborrhicum is yellow; 2, the scales here are dry, and not yellow and greasy; 3, the characteristic undermining and splitting up of the epithelium in this form, which you do not see in any other form of eczema. It mostly resembles the orbicular eczema of the text-books.

The disease is undoubtedly a parasitic one from its clinical manifestations, and is readily cured by proper parasitic remedies.

I bring these few points forward, not to stand on a high pedestal of dogmatism and to grandiloquently wave each case, after a mere glance, to its proper etiological division, but hoping that they will help some one to a more definite and comprehensive knowledge of the subject.

131 East Thirty fourth Street.

Progress of Medical Science.

The Relation of Chololithiasis to Primary Carcinoma of the Gall-Bladder.—According to Dr. Ames two directly opposite views are held respecting the relation of gall-stone formation to cancerous growth in the gall-bladder. According to such men as Klebs, Von Schupple, Murchison, Durand-Fardel, Krauss, Zenker, and others, the new growth may be directly attributed to the prolonged irritation produced by gall-stones, especially in persons predisposed to cancer. Zenker holds that an adenoma develops by irritation, and that it changes into an adeno-carcinoma, which is the primary atypical growth. On the other hand, Lutton, Lancereaux, Lang-Heinrich, Förster and others hold that the presence of the neoplasm favors the formation of calculi, and is the cause, not the result, of gall-stone formation. It is a well-recognized fact that biliary concretions are found in a very large percentage of cases of carcinoma of the gall-bladder. In Courvoisier's list, the percentage in which stones were actually found was 91 per cent. There is good reason to believe, however, that these figures should be larger, as in a number of cases in which calculi were not found there were such evidences as scars and strictures of the ducts to show the former existence of chololithiasis. In Musser's cases the percentage was 92 per cent., while in those that I have collected stones were found in 20, were noted as absent in 1, and were not mentioned one way or the other in 7, making the percentage of cases with, to those without, concretions, 95.4 per cent. These figures are too great to allow us for an instant to suppose that the association of these two conditions is merely accidental. The most important point to be settled, and the one which it seems would be conclusive, is whether the formation of gall stones precedes or follows the cancerous degeneration. Evidence in favor of the former view is plentiful, while that to support the latter is very meagre, though there are a number of theoretical considerations used as arguments that it will lead us too far to discuss here. I have been able to find but one case, *i.e.*, that of Ord, cited by Musser, in which a calculus existed which was definitely proved to be post-cancerous in its formation, and this stone was not a cholesterin formation, but consisted of phosphate and carbonate of lime with altered mucus. On the other hand, there are numerous observations that go to prove the existence of stones prior to the carcinomatous growth. In one of Zenker's cases, for example, fragments of calculi were found, and in the first case I have reported this evening the calculi were much disintegrated, which would seem to point to a degeneration, not to a formation of gall-stones. This fact, in connection with the long-standing history of biliary colic, is conclusive, and would lead us to believe that in all cases when there has been a previous history of biliary colic, and when no stones are found at autopsy, they have existed, but have undergone some such disintegration before the death of the patient.

Again, in one of the cases reported by Klobe an old stone was found with commencing cancer of the neck of the bladder. Klobe states it as his belief that the small size of the gall-bladder in many cases of cancer would be against the formation of calculi, while Zenker holds that the growth in the bladder and ducts would tend to prevent the bile entering the bladder, and so prevent the formation of stones. Quetsch reported a case in which stones had been passed by a biliary cutaneous fistula for

three years prior to any signs of cancer; and cases are reported in which stones were found although the cystic duct was occluded; they have also been found buried in the mass of the neoplasm. From all these facts it would seem that if we are justified in ascribing a causative influence to local irritation in case of cancer in other situations, we should look upon gall stones as exerting the same influence in these cases. Finally, in closing, we may briefly summarize the most important points, following closely the conclusions reached by Dr. Musser, as follows: 1. Primary carcinoma of the gall-bladder is much less uncommon than was formerly believed. 2. It occurs most frequently in women, the ratio being 3–5 : 1. 3. It is a disease more particularly of the middle decade of life. 4. Gall stones are found in from 91–95 per cent. of the cases, and probably bear a causative relation to the disease. 5. Metastasis is not extensive; invasion of neighboring organs by continuity common. 6. Adhesions to adjacent organs frequently occur. Ulceration and perforation are more rare. 7. Pain, jaundice, cachexia, emaciation, tumor, indigestion, nausea, vomiting, constipation, or diarrhœa, with occasional ascites and œdema, are the chief symptoms. 8. Pain occurs in 62 per cent. (Musser). 9. Jaundice occurs in 69 per cent. (Musser.) 10. Tumor occurs in 68 per cent. (Musser). 11. The disease is always fatal, and usually in a short time, the average duration varying according to the best authorities from 3 to 6⅔ months. 12. Death is due to exhaustion, peritonitis, metastasis to other organs, and to biliary obstruction.—*Johns Hopkins Hospital Bulletin.*

Intracranial Aneurism.—The subject of intracranial aneurism was discussed by Dr. Bradford, who presented the history of a case, and by Dr. White, who related the history of two cases in young subjects unaffected with syphilis or malignant endocarditis. Dr. Bradford's patient had slowly developing symptoms such as vertigo, noises in the head, and later, occipital headache and stiffness of the neck. A severe attack of vomiting was followed by intermittent pulse and retention of urine; later in the same day he became comatose, with irregular breathing, and death quickly followed without the occurrence of convulsions, or pupillary changes. The autopsy revealed a ruptured aneurism of the basilar artery.

In the cases reported by Dr. White the symptoms set in suddenly. The first patient fell off her chair while at dinner and became insensible. After regaining consciousness she had headache, vomiting, bradycardia, and a few days later retraction of the head and pain down the spine. A week later complete paralysis of the left third nerve. Then a week after this, a fit, and two days afterward she suddenly became worse and died in ten minutes. There was an aneurism of the left internal carotid near its termination. There was a large amount of clot on the under surface of the brain; it extended to the fourth ventricle, and was one-eighth of an inch thick all down the spinal canal in the subarachnoid space.

The second case was a man, who had no symptoms except slight frontal headache, until he fell down unconscious. Then the pupils became dilated and immobile, right external strabismus, and occasional spasm of extremities. On the outer side of the optic disk was a large subretinal swelling. The drawn-off urine contained sugar. Death followed rapidly after the development of symptoms. There was found on post-mortem examination, a small ruptured aneurism of the right internal carotid artery.

The Treatment of Typhoid Fever.—Of all the branches of the medical sciences it is hygiene upon which we have to look as the most promising study and the branch of medicine to which belongs the future; for, notwithstanding the great progress that has been made within the last few decades in the etiology of diseases, the treatment in many instances is not much further advanced than it was several decades ago. We still have to rely more upon scientific nursing than upon the healing powers of drugs, and in many instances the patients will do better without any medication whatever, excepting, perhaps, when it is used for the psychical effect upon the patient. The rules laid down by Sir William Gull could not be improved upon at the present day. Gull's views with regard to the treatment of typhoid fever were as follows: 1. Typhoid fever is a disease which runs a more or less definite course. It cannot be stopped or cured by medicines. 2. The chief thing to be done at the outset of an attack is to send the patient to bed, so as to save strength from the beginning. 3. No strong purgative medicines are desirable. 4. As the fever develops and the strength grows less, light food should be given at short intervals —*i.e.*, water, toast water, barley-water, milk and water, light broths (not made too strong or too gelatinous). 5. If there be restlessness or much agitation of the nerves, wine (port, sherry, or claret) or brandy in moderate doses as short intervals. This must be directed medically, but in general it may be said that the amount required is that which induces repose and sleep. 6. The bowels may be left to themselves. If unmoved for twenty-four or thirty-six hours a lavement of warm water may be necessary, but this will be directed medically. 7. The restlessness or wakefulness in fever is best remedied by the careful giving of wine or spirit with the food, or in hot water. Sedatives such as opium are inadmissible—mostly injurious. 8. The bedroom to be kept at a temperature of 62° to 65° F. 9. Great care is necessary to keep the bed clean and sweet. This is most easily done by having a second bed in the room, to which the patient can be removed for two or three hours daily, while the other is thoroughly aired and the linen changed. 10. All fatigue to be sedulously avoided. No visitors admitted, and no other person but a nurse and one attendant to help her. 11. Patient's room never to be left unattended for a moment, as in the delirium of fever patient may jump from the bed and injure himself. 12. As to medicines and the treatment of complications, the immediate medical attendant must be responsible. 13. As it is possible that the discharges from the bowels in typhoid fever may be a source of contagion, it is desirable that before being thrown down the closet they should be largely mixed with Condy's fluid or some other disinfectant. On the same principle the strictest cleanliness must be observed in the sick-room. 14. There is no reason to believe that typhoid fever is contagious from person to person, in the ordinary way. The largest experience shows that it does not extend, like an ordinary contagious disease, to nurses or others attending upon patients suffering under the disease.—*Medical Review.*

Jejunostomy.—According to Dr. Hahn the fistula must be made high up in the small intestine, otherwise death will occur from inanition. The author refers to the recorded cases of jejunostomy, especially by Maydl. He thinks that the making of a fistula in the duodenum, as has been proposed, is undesirable, owing to the difficulty in the operation and to the impossibility of the patient feeding himself. Dr. Hahn gives details of five cases in which he has performed jejunostomy. Case I.—A man, aged sixty-nine, suffering from gastric carcinoma, recovered from the operation, but died a fortnight later with increasing weakness. Case II.—A patient with œsophageal carcinoma improved after the operation. Nine weeks later the fistula closed, and the feeding took place exclusively by the mouth. Case III.—A man, also with malignant disease of the œsophagus, died four days after the operation of increasing inanition. Case IV.—A girl, aged nineteen, attempted suicide by means of strong acid. Nearly two months later only a fine œsophageal bougie could be passed. As the sounding was followed by some bleeding, jejunostomy was performed. She made a good recovery. The fistula closed about a month after the operation. She was in good condition some three years later. Case V.—A girl, aged twenty-three, also drank sulphuric acid. About three weeks

later an obstruction was found about thirty centimetres from the mouth. There was great wasting. Jejunostomy was done a fortnight later, but the patient died some eight days afterward. The indications for the operation are, according to Dr. Hahn, the following: 1, Corrosion of the stomach and œsophagus when a fatal result is to be feared, as in the above cases; 2, carcinoma involving the cardia and lower end of the œsophagus when gastrostomy is impossible; and 3, carcinoma of the pylorus where no other operation is possible. The incision should not be too small, so that the commencement of the jejunum may easily be found. If the nutrition of the patient permit of it, the intestine need not be opened for several days, otherwise this must be done at once or after twenty-four hours.—*Deutsche Medicinische Wochenschrift.*

Diphtheritic Conjunctivitis.—In the *Gazette des Hôpitaux*, April 24, 1894, the subject of diphtheritic conjunctivitis is treated at some length by Gilbert Sourdille, who defines diphtheritic ophthalmia as the infection of the conjunctiva by the Klebs Löffler bacillus. There are two distinct kinds of pseudo-membranous conjunctivitis: the croupous form, characterized by a thin, elastic, shining, opaline false membrane, leaving on removal an almost normal mucous surface; and the true diphtheritic form, a profound interstitial infiltration, making the conjunctiva look like bacon rind, thick, blood shot, dirty-yellow, and dotted with ecchymotic spots. Unlike the croupous form, there is no detachable membrane. The first condition is benign; the second of special gravity, owing to constitutional states, to climatic influences, to various chemical and physical agents. According to Mackenzie the nature of diphtheritic conjunctivitis lies in some inherent disposition of the mucous surface itself. A question arises, as to whether these two conditions are not different degrees of the same morbid state; clinically, the croupous variety appears to be the superficial form of the same disease, of which the second is interstitial or diphtheritic (Venneman, Gerke, Kam, Uhthoff, Moritz). If these are really distinct entities, then diphtheritic conjunctivitis may be said to be very rare; but if the so-called croupous condition enters into the group of affections due to the presence of the Löffler bacillus, the disease is at once recognized as relatively common.

Diphtheritic conjunctivitis may be the first point of localization of this special bacillus, and is then a primary disorder; or it may be an extension of the diphtheritic process elsewhere, and is then secondary. It is usually a primary affection, seldom occurring with the ordinary diphtheritic angina, about once in two hundred cases. It occurs most frequently in cold, damp countries, as Germany is, especially in the city of Berlin. In Paris, it appears with relative frequency, and at Nantes some condition favors its appearance still oftener. Both sexes are equally afflicted, from two to eight years of age being the period of predilection. It is also seen in adults and in the new-born. Previous conditions of health are important factors in its production. Infectious diseases, especially measles and whooping-cough, are among the general causes. Much of the purulent ophthalmia of infants is in reality diphtheritic conjunctivitis. Diphtheria of the ordinary form is comparatively rare in nurslings, but in the eye the disease manifests itself among them with greater frequency than is usually supposed.

In the superficial or croupous form of the disease, a trifling catarrh first appears, with sensitiveness of the eyes to wind, artificial light, weeping, a sensation of sand in the eye, etc. Then the discharge becomes muco-purulent, gluing the eyelids together after sleep. Careful examination shows this discharge to be more fibrinous, more coagulable, than that of ordinary catarrh. The conjunctiva is red, vascular, sometimes ecchymotic. That inside the eyelids is even redder, injected, and œdematous. This state lasts from twenty to thirty-six hours. Then the epithelium of the palpebral conjunctiva undergoes a rapid change. It takes on a brilliant varnished appearance. A fine layer of transparent mucilage seems spread over it. This is the beginning of the false membrane. The eyelids are more or less œdematous, the ciliary border takes on a violet tinge, and the secretion is citrine in color. As in the insterstitial form, the false membrane is confined almost always to the mucous surface of the lid. If the conjunctiva of the globe is involved, it is by extension, and never primarily. The false membrane is thin, elastic, and adherent. It can be rubbed off with a piece of linen or removed by forceps. Sometimes the membrane is shed in bits; sometimes in unbroken form, giving a perfect cast of the parts involved. Underneath, the membrane is supple, congested, bleeding on the slightest friction, without apparent fibrinous infiltration. Yellowish spots, here and there, that bleed less easily than the rest of the surface, suggest the beginnings of such infiltration. This period of the disease lasts from three to ten days. Then begins the purulent or third period, characterized by purulent discharge, decrease of pain that has been pretty severe, and a reddened granular condition of the palpebral conjunctiva, now denuded of the false membrane. Too energetic treatment will now bring back the false membrane and cause it to persist with more or less obstinacy. Suppuration diminishes rapidly, and the disease is ended in about two weeks, leaving no scars. During its entire course there is scarcely any fever, some slight emaciation, and a certain uneasiness. In spite of this apparent benignity, serious complications may arise at any moment, especially morbid conditions of the cornea.

In the interstitial form of diphtheritic ophthalmia, the onset is variable. Sometimes it begins by the superficial or croupous form just described, differing only by the shortness of duration of these three stages, that may follow each other so rapidly as to escape observation. Then, again, it appears suddenly as a full fledged infiltration from the start. The eyelids are swollen, œdematous, overhanging, purplish, and the seat of an acrid burning. The surface thermometer may show one and a half degree of abnormal heat. The lids are often one centimetre in thickness and of cartilaginous hardness. The discharge is not abundant. It is citrine in color, dull, flecked with opaline *débris*, with a fetid sanguinary odor. The inside of the lid is thickened, smooth, yellowish-gray, ecchymotic, exactly like a bit of ham rind. It is perfectly bloodless; and cross-rubbing and scarification fail to draw one drop of blood. The fibrinous exudation pervades the entire conjunctiva, implicating the blood-vessels. In certain cases this infiltration is disseminated, appearing in localized patches surrounded by a reddened and vascular mucous membrane. The bulbar conjunctiva is at first slightly injected. Then it is secondarily invaded, though the false membrane never equals in thickness that on the palpebral surface. Symptoms increase in severity. There is considerable fever, loss of appetite, insomnia, emaciation, and albumin in the urine. This stage lasts a week, during which the condition is one of uniform severity or of aggravated symptoms. If there is perforation of the cornea, as often happens, the situation is pitiable in the extreme. The eye, seen as at the bottom of a deep sewer, moves in a mass of bloody corruption. By degrees things improve, the swelling diminishes, the discharge changes in character and is less profuse, the patches disappear, and the patient generally recovers if no secondary infection occurs.

Professor E. Klebs, formerly of Carlsruhe and now of Strassburg, claims to have obtained most satisfactory results from the use of his antiphthisin in the treatment of tuberculosis. The antitoxin has also been tried to some extent in America, those who have used it speaking most enthusiastically of its action. Professor Klebs is now in this country.

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THE REDUCTION IN THE MEDICAL CORPS OF THE ARMY.

THE American Congress is often foolish in its extravagances, but it never betrays a greater imbecility than in some of its attempts at economy. One of the most short-sighted and unnecessary of these penny-wise efforts was the reduction in the army medical staff, passed last winter, whereby the country is saved $30,000 a year, and the efficiency of the medical department is seriously threatened. In the annual report of the Surgeon General just issued this subject naturally receives some attention. The members of the Committee on Military Affairs of the House of Representatives, upon whose recommendation this measure was adopted, had better have given no reason for their action than to put forth what they did. One of their arguments was that there were 210 military posts in the country in 1870, and but 120 in 1894; "if 193 officers in this department were sufficient when the number of posts and stations was 210, there can be as great a reduction as is proposed in this bill when the number of posts and stations is reduced to 120."

The fallacy of this is shown by the fact that there were then 184 acting assistant-surgeons in addition to the regular staff, while now there are none. The committee suggested that, if there were not enough army surgeons to attend to all the garrisons, private physicians living in the neighborhood could be called in and paid by the visit. In reply to this the Surgeon-General shows that the expense to the Government in paying for medical attendance by the visit would in most posts be greater than the pay of an assistant-surgeon.

"Moreover, a post medical officer has various and important duties to perform in addition to caring for the sick. In fact, his presence as a member of the garrison is more important than that of any other officer, for no other officer can perform his duties, whereas any line officer present can perform the duties of quartermaster, commissary of subsistence, adjutant, or commanding officer of a garrison."

But it is mainly as injuriously affecting the efficiency of the medical department in case of war or active service, that the parsimony of Congress is to be deplored. The Surgeon-General very justly says that the weakness of a Medical Department, consisting in part of medical men attending and paid by the visit, would be mainly felt when troops were ordered out for active service. The principal reason for supporting an army in time of peace is that an efficient organization may be maintained which will be ready for service in any emergency, and serve as a nucleus for the larger army which will be required in case of war. This applies to the Medical Department as well as to the fighting force. The duty of our medical officers is not only to attend to the sick at their stations, acting at the same time as health officers for their command, but to be prepared, and to prepare their Hospital Corps detachments, for any emergency, and especially for field service. The call to service in the field is more common in our army than is generally supposed. During the year 1893 the number of medical officers who were out with the various detachments which constituted the average field strength was 69. The largest number of medical officers out in one month was 23, in September, with detachments aggregating 2,954 men, and giving an average strength for the month of 1,663 men. It is for such field service that the need of the junior officers of the Medical Department is chiefly felt. In 1892, 76 medical officers were on field service, the average number of men thus serving having been 1,010. In 1891, 93 medical men were out with various detachments of troops having an average strength of 899 men, and in 1890, 143 medical officers with an average strength of 1,210 men. If attendance on the sick at military posts be made the gauge of the strength of the Medical Department, no provision of medical officers can be made for troops on active service unless certain posts be deprived of their medical officers.

"It must be remembered also, that medical officers are as liable as other officers to break down under the exposures and accidents of field service, or from other causes. During the past three years a little over five per cent. of them have been constantly non-effective from sickness, or 10 officers out of the 192 allowed by law up to the time of the passage of the current appropriation bill. Again, these officers are as much entitled as other officers to leaves of absence; but inasmuch as the Regulations of the Army prescribe that leaves will not be granted 'so that a post will be left without competent medical attendance,' many of the medical officers have to do, year after year, without leaves such as are enjoyed by others. During the past ten years the leaves of absence granted to medical officers were equivalent to an average leave annually of a little less than fourteen days for each. To enable the Department to permit its officers to have one month's leave annually, and at the same time provide competent medical attendance at post, a strength of 8.3 per cent. is needful over and above that necessary to man the post."

"In view of these considerations," Dr. Sternberg concludes, "I regard with regret the policy which has cut off fifteen officers from the Department."

The regret will be shared by all who have been accustomed to point with pride to the efficiency of our army medical service.

The New York Orthopedic Dispensary and Hospital has received from Mrs. Richard T. Auchmuty, $10,000, to endow two free beds in perpetuity, in memory of her husband; from Mr. James H. Jones, $5,000, to endow a free bed in perpetuity; from "a friend" $4,000, to build a modern operating room; and from two of the trustees, $500, to furnish and equip the same.

TYPHOID FEVER IN THE DISTRICT OF COLUMBIA.

The city of Washington has long had the unenviable reputation of being one of the cities most visited by typhoid of any in the country. The Medical Society of the District of Columbia recently appointed a committee to investigate the causes for the prevalence of the disease there, and to suggest measures adapted to its suppression. In the search for these causes the committee investigated especially the water-supply, the drainage, and the milk-supply. The water-supply of the District is derived from the Potomac River and from wells. The water derived from the first source is comparatively good, as the river flows for the most part through a mountainous country, and there are no large cities on its banks above Washington. The water of the wells, however, is almost uniformly bad, sewage bacteria having been found in a great majority of the samples of well-water examined. This is readily understood from the condition of the soil, saturated with fecal matter escaping from leaky sewer pipes and overflowing privies. A study of the geography of the typhoid districts has shown that there is a coincidence between a soil polluted with the leakage of the excreta from typhoid fever patients, the drinking of infected well-water, and an extensive distribution of typhoid fever; that where these first two conditions exist to the greatest degree typhoid fever is most prevalent.

The committee concludes, as a result of its investigation, that "the daily pollution of the soil by the fecal discharges of our patients suffering from typhoid fever, with the resulting contamination of well-water, must be recognized as the chief source of the diffusion of the disease. It is a case of auto-infection. We are daily breeding the poison which poisons us, and the inevitable round from intestine to soil, from soil to well, and from well back to intestine, goes on and on with the most tragic uniformity. We sustain all the conditions favorable to rapid and perfect propagation of the bacilli. Granches and Deschamps have experimentally shown that typhoid germs placed on the surface of frequently moistened ground will penetrate nearly two feet into the soil, and will there retain life for five and a half months. They multiply rapidly in illy drained soil, live for an indefinite time in privy vaults, and have a much longer existence in cisterns and wells than in running water. In Washington we supply all these necessary conditions—leaking privies for the reception of the excreta and their contained germs, a damp and illy drained soil for their reception and rapid growth, neighboring wells for the resulting, the inevitably resulting, contamination of drinking-water consumed by a thirsty population. What more conveniences can we supply? What more successful means can we adopt to raise our mortality to a point higher than that of Brooklyn, New York, Baltimore, and Boston? We are among the most successful cultivators of the deadly bacillary plant in this country."

To remedy this condition the committee urges the abandonment of all wells within the city limits, the sedimentation and filtration of the Potomac water, the purification of the existing sewerage system, and the building of new sewers in parts not yet supplied with drainage, the suppression of all privies in the city, and finally the careful inspection of dairies and regulation of the sale of milk. There is no innate reason why Washington should not be one of the healthiest cities in the country. A great deal has been done for the sanitary improvement of the city in the past thirty years, but much yet remains to be done. It is a hopeful sign that the Medical Society of the District has taken the matter up, and if the District commissioners will but follow the recommendations of the Society, one of the chief causes of mortality in the city may be suppressed.

THE LIVER AND ITS GLYCOGENIC FUNCTION.

Dr. Pavy has recently made some rather radical statements regarding the functions of the liver in its relation to sugar and to the pathology of diabetes.

This distinguished investigator asserts that there is no increase of sugar in the blood leaving the liver, that glycogen is not converted into sugar, that sugar does not disappear in the circulation, and that it is all excreted by the liver. The liver in fine has no more to do with sugar than other tissues, and not so much perhaps as the muscles.

Dr. D. Noël Paton, however, in an article on the "Physiology of the Carbohydrates" (*Edinburgh Medical and Surgical Journal*, December, 1894), denies seriatim these views of Pavy, and says that not one of them is proven. "The evidence for the constant production of sugar in the liver," he says "the evidence that glycogen is a source of sugar, the evidence that sugar disappears in the general circulation (I do not say is used in the tissues), is overwhelming, and thus the glycogenic theory of Bernard holds its ground unshaken."

Dr. Paton further asserts that one of the great functions of the liver is to produce sugar will not, at the present time, be denied by any physiologist. The theory of Pavy, repeated in nearly every text-book, that the liver is a sugar-destroying and not a sugar-forming organ, rests on so unsubstantial a basis, and has been so completely refuted by the work of Seegen and other investigators, that it need not be considered.

When experts disagree, it is difficult for those who are not in possession of special physiological knowledge to decide. We trust, however, that the truth will soon be reached, for there are few questions of more practical interest than that of the physiological chemistry of sugar.

FILLING FORCED VACANCIES.

The trouble in Philadelphia concerning the dropping of an attending physician from the staff of the Philadelphia Hospital, has a wider significance than that which pertains to the results of an ordinary election of officers. In this instance the Commissioners of Charities and Correction, who make such appointments, presumed to decide upon the merits of a vital and scientific question of medical treatment, without consultation with the staff, and in an under handed manner to elect another gentleman in the place occupied by the alleged offender. This rebuke was made more pointed by re-electing all the other members of the medical board. It is surprising to learn that the medical board had no disposition to resent this insult, and still more so to know that a good man could be found to accept the position thus made vacant,

and thus tacitly acknowledge the validity of the principle.

Dr. Walk, who was the only member of the board of trustees to support Dr. Daland, very properly maintained that the question of medical treatment in the hospital was a technical matter, and that laymen were not competent to decide it. If the board had any objection to any method of treating patients, it should have had a commission of physicians to pass upon it. It was, in fact, not within the sphere of the board.

Such doings are, fortunately, not common, and generally occur when managing boards are ignorant of their duties and when a staff lacks pluck and spirit. There are always men waiting for vacant places, no matter how they are created. Managers know this and act accordingly. The principle involved is one thing and the place is the other. Usually they do not come near enough to each other to get acquainted.

A BELATED ASSAULT ON THE GERM-THEORY.

We do not know whether anyone pays attention to the attacks of Mr. Lawson Tait upon vivisection and the germ-theory of disease. At any rate, no one who reads this gentleman's last criticism of microbic pathology, "based on the Baconian Method," will entertain any longer the idea that Mr. Tait understands what he is writing about when he takes up this subject. His "Baconian" argument is that, because his own surgical mortality is light, therefore the germ-theory is false, strikes one as possessing simply the merit of an infantile simplicity. The germ-theory of disease, or of some diseases, is as firmly established as any fact in human science, and Mr. Tait's mortality-rates must be made to fit the facts; the facts are not to be stretched to the Procrustean bed of hospital statistics. Evidently Mr. Tait believes that "the sun do move."

FURTHER REPORTS OF THE ANTITOXIN TREATMENT.

Reports regarding the use of the antitoxin of diphtheria continue to come in from all parts of the world. In Paris, Roux's serum has reduced the mortality fifty per cent. according to published statistics. In London "good results" have been obtained at St. Bartholomew's Hospital in cases not too far advanced. The investigations of the efficacy of the serum are, however, being conducted with much secrecy, according to the *British Medical Journal*. Three kinds of serum are used, Behring's, Aronson's, and that made in London. Whatever the future results will be when the remedy is widely employed, it has not yet been used enough to lessen the very large mortality from diphtheria in the city of London.

At Buda-Pesth, Professor Bokai has reported the results of the treatment of 35 cases of diphtheria with Behring's serum. The number of children who died was 5, giving a mortality-rate of 14.28 per cent. Of the 30 children who recovered intubation was done in 12. Drs. Gottstein and Schleich, of Berlin, have attacked both the theory of the antitoxin treatment and the hospital statistics which have been quoted in its support.

At a recent meeting of the Medical Society of Munich, which was attended by more than three hundred practitioners, the serum treatment formed the subject of a prolonged discussion. Professors Buchner, von Ranke, and C. Seitz presented a report on the subject, and resolutions were passed to the effect that the time was not yet ripe for a definite judgment as to the value of the method, and that trials of the remedy on an extensive scale would be necessary to settle the question. It was considered important that this view should be impressed not only on the profession, but on the public. A committee, consisting of Professors Buchner, von Ranke, Bollinger, Oertel, C. Seitz, von Kerschensteiner, and Wertheimer, was appointed to study the whole question thoroughly.

In France, the War Department has authorized the antitoxin treatment in the army; the cities of Lille and Havre have voted money for undertaking the new treatment.

In Belgium, a sero-therapeutic service has been organized in Brussels, and similar work has been begun in Milan, Piacenza, Turin, and at Lisbon.

In this city the Board of Health has already begun to prepare the serum, and a plant is being established in Washington under the direction of the Marine Hospital Service.

News of the Week.

Dr. William H. Flint, having suffered from a bronchial ailment, since an attack of grippe which he had in the spring of this year, has decided to leave New York for some time, in the hope of regaining his health. Dr. Flint hopes to resume his practice in this city early next fall.

The Twenty-fifth Anniversary of the Northwestern Medical and Surgical Society was celebrated by an evening reception to the members, their wives and guests, on Thursday evening, December 13th, at the house of the President, Dr. W. Gill Wylie, 28 West Fortieth Street, New York. About one hundred and twenty-five persons were present, and the evening was thoroughly enjoyable. This society is one of several in this city organized between 1865 and 1870, just after the war; and its public celebrations have become famous for the generous social spirit among the members and friends.

Newark is to have a new hospital for contagious and infectious diseases.

Dr. Martin L. Ranney died at his residence in this city, 317 West Twenty-ninth Street, on December 14th, in his sixty fifth year. He had practised medicine in this city for more than forty years, and was one of the best known physicians on the west side. He was the brother of the late Dr. Lafayette Ranney. Dr. Ranney leaves two children and two brothers.

National Association of Railway Surgeons.—The following are the officers for 1894 and 1895: *President*, Dr. Samuel S. Thorn, of Toledo, O.; *First Vice-President*, Dr. N. Y. Leet, of Scranton, Pa.; *Second Vice-President*, Dr. C. H. Wilkinson, of Galveston, Tex.; *Third Vice-President*, Dr. B. L. Riardon, of Toronto, Canada; *Fourth Vice-President*, Dr. W. B. Morrow, of Walton, N. Y.; *Fifth Vice-President*, Dr. A. O. Will-

iams, of Ottumwa, Ia.; *Sixth Vice-President*, Dr. G. A. Hollister, of Toledo, O.; *Seventh Vice President*, Dr. W. R. Priest, of Concordia, Kan.; *Secretary*, Dr. J. M. Dinnen, of Fort Wayne, Ind.; *Assistant Secretary*, Dr. J. H. Ford, of Wabash, Ind.; *Treasurer*, Dr. Eugene R. Lewis, of Kansas City, Mo.; *Editor of Journal*, Dr. R. Harvey Reed, of Columbus, O.; *Executive Committee*, Dr. C. K. Cole, of Helena, Mont.; Dr. A. J. Mullen, Jr., of Michigan City, Ind.; Dr. J. B. Murphy, of Chicago, Ill.; Dr. A. A. Thompson, Waxahachie, Tex.; Dr. D. E. Welsh, of Grand Rapids, Mich.; Dr. C. D. Evans, of Columbus, Neb.; Dr. F. H. Peck, of Clinton, N. Y.; *Chairman Committee on Transportation*, Dr. W. B. Outten, of St. Louis, Mo.; *Chairman Committee on Arrangements*, Dr. A. I. Bouffleur, of Chicago, Ill.

The Promised Life of Sir Andrew Clark is being prepared by Canon MacColl, with the co-operation of Dr. W. H. Allchin. An introduction will be contributed by Mr. Gladstone. The book is not expected to be ready for some time yet.

A Typhoid Antitoxin.—A rumor was current on the Stock Exchange of Frankfort-on-Main the other day, that the Höchst Works would shortly bring on the market a typhoid antitoxin of Behring's discovery. The consequence was a decided rise in Höchst shares!

Bequests to Medical Institutions of Philadelphia.—By the will of the late Dr. William Goodell, of Philadelphia, the sum of $50,000 is donated to the Medical Department of the University of Pennsylvania. The College of Physicians will from the same source fall heir to $10,000.

Kentucky School of Medicine.—On the 22d inst. the Faculty of the Kentucky School occupied for the first time their commodious new hospital and dispensary.

Honors to Medical Men.—The Sultan has conferred the honor of Grand Officer of the Medjidieh Order on M. Monod, Director of the Assistance Publique of France; Professor Grancher and M. Roux, of the Pasteur Institute; and M. Pozzi, the well-known gynecologist. M. Martin, of the Pasteur Institute, has received the decoration of a Commander of the same Order.

Ohio State Association of Railway Surgeons.—The annual meeting of this body was held at Dayton, October 11th and 12th.

The Southwestern Association of Railway Surgeons.—The following are the officers of this organization: *President*, Dr. C. A. Smith, of Tyler, Tex.; *Vice-Presidents*, Dr. E. A. Neeley, of Memphis, Tenn.; Dr. W. G. Jameson, of Palestine, Tex.; Dr. E. F. Yancey, of Sedalia, Mo.; Dr. B. F. Eads, of Marshall, Tex.; Dr. N. J. Pettijohn, of Kansas City, Mo.; *Secretary*, Dr. J. A. Lightfoot, of Texarkana, Ark.; *Treasurer*, Dr. L. H. Callaway, of Nevada, Mo.

The Association of Military Surgeons of the United States.—The following are the officers for 1894 and 1895: *President*, George M. Sternberg, Brigadier-General and Surgeon General, U. S. Army, of Washington, D. C.; *First Vice President*, Louis W. Read, Colonel and Surgeon-General, N. G. Penn., of Norristown, Pa.; *Second Vice-President*, Albert L. Gihon, Medical Director, U. S. Navy, of Washington, D. C.; *Secretary*, Eustathius Chancellor, Lieutenant-Colonel and Medical Director, N. G. Mo., of 515 Olive Street, St. Louis, Mo.; *Assistant Secretary*, Julian M. Cabel, Captain and Assistant Surgeon, U. S. Army, of Washington Barracks, Washington, D.C.; *Treasurer*, Lawrence C. Carr, Major and Surgeon, N. G. Ohio, of 143 W. Seventh Street, Cincinnati, O. Meets at Buffalo, N. Y., May 21, 22, and 23, 1895.

A Bequest to the Massachusetts General Hospital.—By the will of the late Thomas E. Proctor, the Massachusetts General Hospital, of which he was a trustee, receives $100,000. This sum is to be held in trust until principal and interest reach the amount of $400,000.

The West Side German Dispensary.—The members of the staff have founded a clinical society styled the Society for Medical Progress of the West Side German Dispensary. The officers are: Dr. Augustin H. Goelet, *President;* Dr. Lewis Morris and Dr. V. Fuentes, *Vice-presidents;* Dr. Aristides Agramonte, *Secretary;* and Dr. H. C. Hazen, *Treasurer.*

Diphtheria in St. Louis.—Diphtheria is so prevalent in certain portions of St. Louis as to be considered epidemic. A large number of the earlier cases are said to have been reported by the physicians as "croup" or "laryngitis."

The German Medical Society of the City of New York held a festival last Saturday evening, at the Arion Club, to celebrate its thirty-fourth anniversary. The entertainment consisted of a dinner followed by a ball. Speeches were made by Drs. Jacobi, Willy Meyer, Vulpius, and Heitzmann.

Manufacture of Vaccine Virus by the State of Illinois.—A committee has been appointed by the Illinois State Board of Health to promote legislation by the next General Assembly for the establishment of a State vaccine farm. It will be remembered that within the last year efforts were made to secure such legislation in Massachusetts. These attempts, unfortunately, were not successful.

Receipts from Portrait Exhibition.—The exhibition of portraits of women, organized by a number of ladies of society, which has just closed at the Academy of Design, netted about $20,000 for St. John's Guild and the Orthopedic Dispensary.

The Antitoxin Treatment of Tetanus.—Dr. E. Schwarz reported last week on a case of tetanus treated by Tizzoni's antitoxin. The treatment was commenced on the second day of the disease, and the spasms disappeared under the treatment, but the temperature rose during this time from 37.3° C. to 40.3°, and the patient, after the fourth injection, died from heart failure. It was clear that the leucocytosis was increased in consequence of the treatment. The number of the leucocytes was 11,000 before the first injection, rising to 18,000 on the next day, and was 17,000, 16,000, and 15,000 on the following days. Dr. Schwarz recommended the use of stronger doses of the antitoxin than those prescribed by Tizzoni.

A Gold Cup for Discovering a New Microbe.—The citizens of Nagasaki have presented Professor Kitasato with a beautiful gold cup in honor of his discovery of the bacillus of the plague.

Obituary.

GEORGE A. PETERS, M.D.,

NEW YORK.

Dr. George A. Peters, one of the most prominent of New York Surgeons, died December 6th, of chronic Bright's disease. Dr. Peters was graduated from the College of Physicians and Surgeons in 1846, and his career was a most successful and interesting one. For the last four years he had retired to a large extent from active practice, but at the time of his death he was still consulting surgeon to the New York, St. Luke's, St. Mary's, and the Woman's Hospital.

During his medical course he was a private pupil of the late Dr. Alfred C. Post. After his graduation he served the prescribed period on the house staff of the New York Hospital, and a few years later he was appointed a surgeon to that institution, also to St. Luke's Hospital. Although his hospital work was wholly surgical, he was for many years one of the most successful and popular of the general practitioners of New York.

FRANK L. SIM, M D.,

MEMPHIS, TENN

Dr. Frank L. Sim, died at his residence in Memphis, Tenn., November 23, 1894. He had been in failing health for several months. Dr. Sim was born in Golconda, Ill., April 29, 1834. His literary education was received at Hanover College, Indiana. He graduated from the medical department of the University of Louisville in 1855, and a year later received an *ad eundem* degree in the Pennsylvania Medical College. Returning home in the spring of 1857, he practised medicine with his father till 1861, when he left that part of the country and shortly afterward entered the Confederate service as a contract surgeon in the army, then stationed at Columbus, Ky. Circumstances induced him to locate in Memphis, where he ever since devoted himself to the practice of his profession. He remained at his post of duty during the dark days of Memphis in the various epidemics of cholera and yellow fever. In 1882, Dr. Sim became the editor of the *Mississippi Valley Medical Monthly*, but afterward changed to the *Memphis Medical Monthly*, under which name he has continued its editor and publisher. Dr. Sim at the time of his death was Professor of the Principles and Practice of Medicine in the Memphis Hospital Medical College and was Dean of the Faculty.

Dr. C. P. Gage, of Concord, N. H , died on November 26th, aged eighty-three. He was one of the original members of the American Medical Association, and had been president of the New Hampshire Medical Society.

Reviews and Notices of Books.

Transactions of the Forty-ninth Annual Meeting of the Ohio State Medical Society, held at Zanesville, May 16, 1894. Toledo, O.: Blade Printing and Paper Co.

Contains the usual assortment of papers, many of them of considerable interest. As might be expected, tuberculosis comes in for rather a large share of attention. Papers on sterilization and immunity, and pleas for higher medical education, and for the cremation of the dead, are also noteworthy as illustrating tendencies of the times.

A Manual of Human Physiology. Prepared with Special Reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D. Philadelphia: W. B. Saunders.

Believing that only the main principles of the subject of physiology can be imbibed by the medical student during the limited time of his study, the author has attempted to make these available in condensed form. Without too fully endorsing the view that students should be trained on manuals—especially in this day when the tendency everywhere is to lengthen medical courses—one may at least admit the value of concise, direct, and unequivocal elucidation of principles; and it may be freely conceded that the essentials of human physiology are compressed within the three hundred and sixty-five pages of this manual in a most attractive form. Numerous creditable illustrations—some of them colored—reinforce the text.

Fifth Annual Report of the New York State Commission in Lunacy. From October 1, 1892, to September 30, 1893. Albany: James P. Lyon, State Printer.

Judged quantitatively, this report certainly shows great advances on the part of the Commission in Lunacy, inasmuch as it is six times as bulky as the first report, issued in 1889. Considered as to quality, the advance is not so striking. Of course there are good suggestions in the report, but there is much that might advantageously have been omitted or greatly condensed—for example, the copy of the estimate for supplies, and the monthly treasurer's report of the Rochester Hospital, which fills fifty printed pages, and the endless legal papers giving details of the squabble between the Commissioners in Lunacy and the authorities of Queens County.

Whatever the failings of the Commission in Lunacy, it has never been accused of lack of self-appreciation, and in this regard the present report shows no falling off. Should the future historian come upon these volumes, he will certainly be excusable if he reaches the conclusion that in the last decade of the nineteenth century the ill-used insane had but three friends in the State of New York, these being, of course, the Commissioners in Lunacy. But should the same historian come across sundry letters and other unofficial documents relating to the same subject that may chance to be preserved, we fear he will be sadly puzzled. For in point of fact, there are other friends of the insane in New York, and not a few of them, differing very widely from these reports in their estimate of the value of the work of the Commission in Lunacy.

Twelfth Annual Report of the Provincial Board of Health of Ontario. Being for the year 1893. Printed by order of the Legislative Assembly. Toronto: Warwick Brothers & Rutter. 1894.

Contains reports on many topics having to do with sanitation, some of them only of local interest, others more general in their application, but all illustrating the wide-spread interest in preventive medicine that marks our generation.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Second edition, enlarged and thoroughly revised. With 94 Illustrations, of which 17 are Colored. Philadelphia: Lea Brothers & Co. 1894.

Although this second edition contains double the letterpress of the first edition, the author explicitly states that he has adhered closely to his original plan, making no attempt to cover the field exhaustively, but referring only to species that "are comparatively common, or of importance in enabling the student to acquire a fundamental working knowledge, capable of wider application." It is, in short, a work for beginners and general students, and as such, of course lays no claim to originality of matter; but its method is concise and clear, and it gives just such an account of the practical manipulations of media and cultures as will prove of value to the student who must learn laboratory methods by himself. A satisfactory summary of the present status of the various theories of infection and immunity has been added to this edition.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Seventh Annual Meeting, Held in Charleston, S. C., November 13, 14, and 15, 1894.

FIRST DAY, TUESDAY, NOVEMBER 13TH.

THE Association met in Artillery Hall, and was called to order at 10 A.M. by the President, Dr. C. Kollock, of Cheraw. Prayer was offered by the Rev. Dr. Campbell, of Charleston. An address of welcome was delivered by the Mayor of Charleston. Dr. Brodie, of Charleston, followed with an address of welcome on behalf of the local profession, and President Kollock responded in behalf of the Association.

Dr. Warren Stone.—DR. WILLIAM E. PARKER, of New Orleans, read a "Memorial Address" on Dr. Warren Stone, which was prepared by the late Dr. A. B. Miles, of New Orleans. He said as Professor of Surgery in the University of Louisiana for thirty-five years, as Surgeon to the Charity Hospital for thirty-eight, and as general practitioner from 1832 to 1872, whose experience covered eighteen epidemics of yellow fever and cholera in New Orleans, the name of Warren Stone is impressed indelibly upon the local history of a remarkable period. In his surgical clinics he taught the advanced surgery of the old school. He taught the principles of drainage in suppurative arthritis, in hepatic abscesses, and in pyothorax. He advocated resection of the rib to facilitate the drainage in suppurative pleuritis. Whether in operative work or in the liberation of pus he made free incisions. He was among the first in the cure of aneurism of the vertebral artery. In the surgery of the arteries he was an expert. During fourteen years of his work at the Charity Hospital, he operated without an anæsthetic. Realizing the difficulties under which he labored, he was ready to welcome the new era in surgery then about to dawn. The lives of many men are mirrored in their books and published papers, but the writings of Dr. Stone give but meagre knowledge of his work, or his position as an authority on surgery in the South. No man in the profession was ever so universally beloved as Dr. Stone. In his relations with other physicians he was gentle and considerate, never intrusive or aggressive. Many of the physicians in Louisiana to day who knew him in life, speak of him affectionately as "Old Stone," and always with some expression of endearment and respect. His position in New Orleans may be compared with that of Physick, in Philadelphia, Mott, in New York, Lister, in London, Velpeau in Paris.

Gonorrhœa in Women.—DR. J. B. S. HOLMES, of Atlanta, read a paper with this title. He said there was no disease that affected women that should engage the serious and thoughtful consideration of the physician more than gonorrhœa. There was no doubt but that many of the chronic diseases of the ovaries and tubes that came under the observation of gynecologists were due to this disease. In the majority of cases the poor woman was ignorant of the fact that she had had or has any specific disease. Indeed, her husband might tell the physician that months or even years before his marriage he was a subject of gonorrhœa, which was cured and had since shown no evidence of a return.

The essayest could conceive of nothing more dangerous than curetting the uterus in the presence of immense pus-tubes with pelvic adhesions. The drawing down of the organ necessary for curettage may break up pelvic adhesions and pour out the contents of pus-sacs into the peritoneal cavity, which would result in the majority of cases in death to the woman. If her life is saved at all, it will only be done by a prompt abdominal section, with thorough irrigation and drainage of the abdomen. Then why not, in the first instance, when pus is detected, promptly remove it by surgical interference. We then treat the woman rationally and give her the very best and only chance of relief and restoration to health.

DR. GEORGE J. ENGELMANN, of St. Louis, called attention to the importance of differentiating between latent or chronic gonorrhœa and the acute form of the disease. He does not look upon acute gonorrhœa as a dangerous disease in women, but he does the latent or chronic form. He has not seen serious results from the acute form, but it is the infection which is not observed from a supposedly cured gonorrhœa in the male which produces the suffering in women.

DR. BEDFORD BROWN, of Alexandria, Va., took exception to the statement made by Dr. Engelmann in regard to the non-danger of acute gonorrhœa in females, and cited the case of a female in whom acute gonorrhœa ran its course, terminating finally in fatal nephritis. In this case there was first urethritis, then cystitis, ureteritis, pyelitis, and acute nephritis.

DR. RICHARD DOUGLAS, of Nashville, thought Dr. Engelmann had sounded the keynote in that there is quite a difference in the infection from acute gonorrhœa and the latent form of the disease. Infection from the latter was a mixed infection, not only with the gonococcus, but with the streptococcus and staphylococcus also, and that accounts somewhat for the virulence of the trouble. That gonorrhœa is the cause of uterine fibroids, he could scarcely accept, although he thought Dr. Price was the author of that idea.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., said in the treatment of pus-tubes the result of gonorrhœal infection, the very radical suggestion of Dr. Holmes was correct, viz., to resort to abdominal section, as he was satisfied that gonorrhœal pus tubes were incurable by conservative measures. In addition to the removal of pus-tubes, if present on both sides, the uterus should be removed also, because it is through the infected mucous membrane of the uterus that the tubes themselves have become infected.

DR. WILLIAM P. NICOLSON, of Atlanta, said the general surgeon was concerned in the treatment of gonorrhœa as well as the specialist. We are told that a urethra has been inflamed and subsequently restored to its normal condition, and yet years afterward the man transmits gonorrhœa to his wife. It is hard for him to accept such a doctrine. If a man goes for months and years with a gonorrhœa absolutely producing no effect whatever, if he is not well, how are we to tell him that he is not? We are told by the essayist that gonorrhœa is contracted by the female when there is absolutely no evidence whatever of disturbance in the urethra of the male, or that there is no trouble by which he can propagate disease.

DR. A. M. CARTLEDGE, of Louisville, thought the essayist failed to differentiate between cases of subacute and chronic salpingitis and the cases of acute infection from gonorrhœa. He threw out the suggestion that physicians were not fully conscious of the great prevalence of artificial abortions in young married women of the better as well as the lower class, and he believes that in these cases of secondary infection from pathogenic organisms we have a more fertile source for the development of the tubular and ovarian disease than from gonorrhœa.

DR. W. E. B. DAVIS, of Birmingham, Ala., considered the disease a dangerous one. The views of Tait, however, in regard to gonorrhœa were extreme. We have a frequent cause of tubal disease in the puerperal state, in delivery at term or in premature deliveries, frequently in artificial abortions, brought about by mechanical means. More or less infection occurs after all cases of abortion, but if the patient is in good condition at the time, she will not be materially affected. If we have a soil that is favorable for the development of septic germs, we will get a severe inflammation—a mixed infection.

DR. W. D. HAGGARD, of Nashville, desired to place himself on record as opposed to the removal of the uterus and tubes for pyosalpinx as the result of gonorrhœa, be-

lieving that by dilatation and judicious curetting patients can be relieved of an endometritis produced by gonorrhœa.

Dr. John D. S. Davis, of Birmingham, Ala., emphasized the importance of using the microscope in connection with gonorrhœa and carefully examining the pus. Experience has demonstrated that the latent effects of gonorrhœa were not always directly due to the gonococcus *per se*, but to a mixed infection; that is, we have an inflammation as a result of the gonococcus, which is fired up by another infection from the streptococcus. When we have a mixed infection, we have as a result pus-tubes, suppurative peritonitis, and finally death of the patient if surgical interference is not resorted to.

Dr. Hunter McGuire, of Richmond, entered a protest against the doctrine that a man can have gonorrhœa and not get well. As for the idea that a man who has had gonorrhœa should not get married, it is preposterous. He had seen thousands of cases get well and remain so.

Dr. Holmes, in closing, said he was aware that many cases of acute gonorrhœa resulted in no secondary trouble, because they were recognized early and cured by judicious treatment. He wished to be understood as not indorsing the views of Mr. Tait, that gonorrhœa in the male was never cured, but he insisted that general practitioners were often too careless in advising patients who have been the subjects of gonorrhœa to get married.

Some Cases of Acute Intestinal Obstruction With Deductions was the title of a paper read by Dr. A. Morgan Cartledge, of Louisville, in which he reported six cases, three of which terminated fatally. The author said that the limited number of operated cases reported in his paper, together with an individual observation of probably as many more not subjected to operation, conform to the accepted belief of the hopeless nature of acute intestinal obstruction unless treated by early laparotomy.

While the author does not contend that we can dispense with opium in the treatment of these cases, certainly where obstruction is in the least suspected we should withhold its use until a diagnosis can be made. The practice of masking every abdominal condition characterized by pain with opium is far too prevalent, and its practice gains additional calamity as surgery advances in knowledge which refers relief of these very conditions concealed by the cloak of opium and ignorance.

The practical and cardinal points in avoiding a fatal delay and making an early diagnosis, are to be found in, sudden abdominal pain; a rapidly accelerating pulse; the vomiting of much more fluid in a given time than taken by the mouth; the green tinged character of this fluid; the anxious expression of countenance when no opium has been used, the fact that although enema may be stained by the contents of the colon there is no expulsive movement of the bowels, and the passage of no gas.

The burning question now is to educate men to know that action to be successful must be quick; that timely aid depends upon the man who first sees the case; that when a physician from any reason suspects that a patient's bowels will not move, he should drop everything else and centre all his time and attention upon that patient. He should not waste his gray matter by trying to determine if it be a probable intussusception, volvulus, band, diverticulum or what not—leave that for the operation to determine; it is the most reliable way to find out.

Second Day, Wednesday, November 14th.

Hernia of the Diaphragm.—Dr. F. W. McRae, of Atlanta, Ga., reported a case of this kind. The author brought this subject before the Association for consideration, not alone because it offered an inviting field for experiment and investigation, but also because of a recent interesting case where, without warning, he was forced to meet the emergency without time for research into the literature of the subject, and while he was not then sustained by a knowledge of the opinions of the leading authorities. He finds from subsequent investigation that the course pursued was in accord with the recommendations of such eminent authorities as Laennec, Bowditch, Guthrie, and Marcy. In the case reported, strangulation had occurred five days before the doctor saw him. Had an early diagnosis been made, he feels sure the strangulation could have been relieved and the patient's life prolonged. The opening in the diaphragm was accessible, and he believes it could have been closed with a fair chance of permanent recovery. The case serves to emphasize the necessity for early operation in all cases of acute obstruction of the bowels.

Gunshot Wound of the Spleen and Kidney.—Dr. Louis McLane Tiffany, of Baltimore, Md., reported the following case: The patient was a male negro, twenty years of age. Two hours previous to entering the University Hospital, March 21, 1894, he had been shot with a small-calibre rifle from a distance of twenty feet, the weapon being directly behind him, and he being erect. His urine was slightly albuminous; the pulse, temperature, and respiration, normal. There was a bullet wound three inches to the left of the spine just below the last rib, from which blood oozed. After properly cleansing the wound it was enlarged, and it was found that the kidney had been injured and that a bullet had passed onward, presumptively into the peritoneal cavity. The wound was filled lightly with gauze by the resident physician, and Dr. Tiffany was notified. External examination of the abdomen by touch and palpation revealed nothing, not even painfulness.

The patient was anæsthetized, laid on the belly, and the wound, after being enlarged, was examined. The upper portion of the left kidney was perforated, and dark blood flowed from the peritoneal cavity beyond. This large wound was filled with gauze, the patient turned on the back, and the abdomen freely opened along the left semilunar line. A moderate amount of blood was free in the peritoneal cavity; no wound of the intestine could be discovered, but the spleen was found perforated, blood flowing freely from the wound of entrance, as well as from the wound of exit; the latter wound, in the concavity of the organ, was slightly the larger of the two. The perforation through the spleen was about three inches from the free lower border. Unwilling to subject the patient to splenectomy, the essayist attempted to arrest the bleeding in the following manner: A long needle threaded with silk was passed entirely through the spleen central to and parallel with the bullet track; the long ligature was then tied over the free border of the organ so as to press the surfaces of the wound together tightly enough to arrest bleeding, yet not to tear through the splenic tissue; the ends of the ligature were cut short, the peritoneal cavity cleaned by copious irrigation with hot water and the abdominal wound closed. The kidney was tamponed with gauze through the dorsal wound. Convalescence was uneventful; the anterior wound healed by primary union; urine flowed from the dorsal wound for two days only, union by granulation taking place. The patient left the hospital well, April 22d.

In this case, the wound being small, hemorrhage was not profuse, and no abdominal organ save the spleen was wounded.

Nævus.—Dr. William Perrin Nicolson, of Atlanta, Ga., reported a severe case of nævus, which was only cured by the use of galvano-puncture. The case was one of a large growth occupying the groove from the angle of the jaw, up to and covering a portion of the ear, and extending out upon the cheek, the entire tumor being almost the size of a hen's egg.

Dr. Nicolson formulated the following conclusions as having been reached in the long period covered in the treatment of this case: 1. That while this treatment may not be applicable to all cases, in many of those that are reached by difficult dissection, and are subject to

dangerous hemorrhage, as well as an unsightly looking scar, this is undoubtedly to be preferred to any other surgical proceeding. The time required in a cure is more than balanced by the entire preservation of the skin and the absence of danger from operative work. 2. That as to the quantity and quality of the current to be employed, as many as six cells of a zinc-carbon battery may be sufficient in small growths, while twelve cells of the same is perhaps the maximum to which it should be carried if the current from the positive pole alone should be employed. 3. The method of applying needles. Various forms of needles may be employed, but the ordinary steel needle gives equally satisfactory results, as the eschar produced in the skin at the point of entrance is not sufficient to amount to anything, and the needles can thus be changed at each sitting. That only one of them should be inserted into the tumor, while the negative pole should be attached to a sponge electrode moistened with a salt solution, and placed upon some indifferent point, care being taken to remove it from point to point in order to prevent blistering the skin. 4. Method of attacking the tumor. Better results are obtained by passing the needle in from the periphery of the growth on a line horizontal with the skin, and in directions radiating from the circumference toward the centre. Several of these punctures should be made at each operation. The length of the entire setting should not extend to more than twenty minutes or half an hour, while intervals of two to three weeks, or longer, should be left between operations to know whether there may not be a progressive shrinking away of the tumor. 5. As to the method of cure. He thought that several elements entered into attaining the result, of which the coagulum of the blood was one, and perhaps the least. The two remaining elements were the subsequent contraction of the small eschar produced in radiating lines from the tumor, and the effect of the current upon the vasomotor nerve supply.

He felt sure that a thorough trial of this method as to the settling of the various points considered, would result in its adoption in the treatment of perhaps a large majority of these cases where we have a large elevated blood-tumor with which to deal. He also believed that perhaps pricking the surface with the needle attached to a positive pole of battery, might result in a series of small scars, which would result in removing the ugly port-wine marks so common in this trouble.

Operations for Complete Perineal Laceration.—Dr. Joseph Price, of Philadelphia, said that there are many men who, essaying to be authorities on the surgical diseases of the major order, have no conception whatever of injuries of the perineum and cervix so far as their intelligent repair is concerned. Indeed, there are many, with a large obstetrical practice, who labor under the delusion that they have never ruptured a perineum, and that all their patients have entirely normal perinea. This misconception is due to improper teaching more than to any other cause. Perineal lacerations, unless extending through the skin to or through the sphincter may escape detection unless by thorough digital examination. All these tears should be approached as distinct surgical lesions to be repaired in the line of their anatomical destruction, and not as cosmetic operations, whose object is to obtain superficial appearances without regard to perfection and utility. Heaping up of tissue outside the lines of resistance and tension, or mere thickening of mucous membrane and skin does not make a true perineum, neither does a set of outside sutures, however much they may draw the parts together, afford any anatomical counterpart of a perineum. From this basis all the so-called outside flap-splitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Big sutures, heavy ligatures, clumsy instruments, have no more place here than in other surgery. The ordinary short, strong sewing needle fills the bill exactly in most cases, though the Emmet stray-fine short needle for general use is preferable. Silk-worm gut or silver wire is the preferable suture. The Emmet operation as originally suggested, and afterward modified by its distinguished deviser, is the foundation for all successful operations on the lacerated perineum, either with or without sphincter tear.

Dr. Price, in closing, said the tears of perinea are often unavoidable, but their restoration is always possible, and their neglect is criminal.

President's Address.—President Kollock then delivered his annual address. He first thanked the Association for the honor conferred upon him in electing him as President. He then alluded to the death of Drs. William T. Briggs, of Nashville, and A. B. Miles, of New Orleans. Dr. Briggs's life had been one of usefulness. He had done excellent and remarkably brilliant work, and had achieved an enviable reputation. Dr. Miles, who had been made Professor of Surgery in Tulane University, was a man full of youthful activity and manly vigor, who by patient study and diligent research, aided by a brilliant intellect, had won for himself a high position in the profession, and in the estimation of his fellow-men. To know him was to admire and love him. His life was gentle and the elements so mixed in him, that Nature might stand up and say to all the world, "This was a man."

While in all branches of gynecology good progress had been made, he noted with pleasure that surgery had had its triumphs. Many reports of cases show enlarged experience and continual improvement in the treatment of appendicitis, hernia, intestinal obstruction, and many other ills that flesh is heir to.

Action of Chloroform on the Functions of the Human Brain and Spinal Cord.—Dr. Bedford Brown, of Alexandria, Va., read a paper on this subject. He cited the history of two cases of extensive compound comminuted fracture of the frontal bone and serious injury and destruction of a portion of the frontal lobes of the brain as the basis of his paper. One of these cases of injury was caused by a kick of a newly shod horse, the other by a spent grape-shot in battle. The subjects of both of these injuries retained perfectly their powers of consciousness and sensation.

The fracture in the first case involved a large portion of the frontal bone. The fractured bones were driven back into the substance of the brain quite an inch in depth, lacerating the frontal lobes extensively. There was a loss of about two tablespoonfuls of brain. During the operation, which lasted more than an hour, the patient was placed under the influence of a compound of chloroform three parts, and ether one part, four different times. Through this large opening in the skull the brain could be seen perfectly and its varying changes of action under chloroform could be observed perfectly. The invariable action of the anæsthetic was to suppress hemorrhage, to quiet cerebral pulsation and to positively reduce circulation in the brain and arterial tension. These peculiar effects were observed as many as three or four different times. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly.

Any struggling, mental excitement, or resistance while inhaling chloroform caused marked increase in cerebral circulation and pulsation, with increase of hemorrhage.

The second case was that of a Confederate soldier, who in battle received a spent grape-shot in his forehead, causing an extensive compound comminuted fracture of the os frontis, driving the fractured bones back more than an inch into the frontal lobes. The wound in the skull was quite two inches in diameter, and more than an inch in depth. This patient was subjected to chloroform three times during the operation, which lasted an hour. The action of chloroform on the functions of the brain in this was similar to that in the first. When under full anæthesia each time the cerebral hemorrhage ceased, the cerebral pulsations diminished to a mere

tremor, and the arterial circulation was markedly reduced. This occurred three different times during the operation. The action of alcoholic stimulants resorted to in this case to prevent collapse from chloroform increased the cerebral pulsations and circulation in a positive manner.

Hydro-Pyonephrosis; Successful Removal of a Forty-Pound Tumor of the Kidney.—Dr. Joseph Taber Johnson, of Washington, D. C., reported the case. The patient was sixty-three years of age, and had inherited and possessed until five years ago a remarkably good constitution. At this time a lump appeared in his right side in the region of the liver, and was supposed up to the date of the operation to be caused by enlargement and abscess of that organ. This lump gradually increased in size, and the patient had gradually lost flesh and strength until the date of the removal of the lump, when he could not have weighed more than eighty pounds. At no time did he suffer from pain, and only a few weeks with fever.

There were several points of interest in this case, viz: failure of a number of good men to make a diagnosis, though the patient was under observation for nearly five years. Failure of repeated examinations of the urine to detect the slightest evidence of disease of the kidney. The only explanation the writer suggests is that the disease at the time of analysis and subsequently had so destroyed the function of the kidney as to prevent the escape of any urine at all, and that the specimen examined came from the other organ, which fortunately was healthy. Failure of such large quantities of foul smelling pus to produce more sepsis. Absence all through the history of pain or fever. The median line incision, the separate ligation of the renal vessels, and the ligation and dropping of the ureter.

The writer is aware that the lumbar incision is preferred by nearly all nephrectomists, and that they often bring out the cut end of the ureter and fasten it to the abdomen. While the lumbar incision may be best in small tumors and otherwise disease of kidneys, it certainly could not have succeeded, the author believes, in a case of the magnitude of the one here reported, not only on account of its great size, but also because of its being so extensively adherent to the omentum and abdominal wall. The colon had to be carefully separated from the anterior surface of the tumor.

Gunshot Wounds of the Abdomen.—Dr. W. L. Robinson, of Danville, Va., reported two gunshot wounds of the abdomen, lacerating the liver and bowel. In neither case were the symptoms commensurate with the injury; neither shock, hemorrhage, nor pulse portrayed the necessity for operation. Yet in view of the ninety-two per cent. mortality from gunshot wounds of the abdomen without operation, he did not hesitate. The first case came so near dying on the table and his light being imperfect at 12 o'clock at night, he only found the liver wound, failing to find the hole in the posterior border of the hepatic flexure of the colon. The patient died in three days. His second case was operated on promptly, and the injury in the transverse and descending colon was promptly repaired with the Murphy button. The man was on a spree and had had no action from bowels for three days. He pressed out much fecal matter, but should have taken more time and ruptured the bowel as far as practicable. For two days no unfavorable symptoms presented themselves, but on the night of the second day distress from tympanites and pain began. He suggested to his associates the propriety of reopening the abdomen, but enemata and grain doses of calomel were tried. This, the author considered, was his fatal mistake, for the waiting of ten hours had lost him the chance of a life-saving operation. He reopened and with medium trocar emptied the bowel of gas, but exudative lymph was manifest on bowels, and obstruction of button by fæces existed. The button held its tissue firmly, and no leakage had occurred. He washed out the cavity, but patient died in ten hours of shock.

Movable Kidney.—This paper was read by Dr. George Ben Johnston, of Richmond, Va. At the outset the author emphasized three propositions: 1. Movable kidney is extremely common. 2. It is capable of producing very distressing symptoms, and in many instances is a menace to life. 3. It is curable by a simple and safe operation.

The author's own experience with movable kidney from a surgical standpoint extends back a little more than three years. Prior to the first nephrorrhaphy, which he performed in May, 1891, those cases he has met with were given little or no thought. Since the date mentioned, he has looked with more interest on his cases, and has come to marvel at the frequency of the malady. He has examined a limited number of persons likely to be the subjects of movable kidney since his first operation for its relief, and in a comparatively small number of subjects he has encountered twenty-seven cases. Edebohls, who had studied five hundred cases, fixes the rate at one for every five or six women examined. Linder gives about the same rate. Osler makes no statistics, but mentions it as a common occurrence in his hospital wards. The records of these observers and Dr. Johnston's cases justify the assertion that it is a common malady.

It occurs more often in women. He had never seen one in a male subject. Age is a factor in its production. His own cases have been in subjects varying in age from twenty to thirty-five years. In only one instance has he seen it in a women over forty. Both kidneys may be movable at the same time. The right is the one that is affected in the preponderating majority of the observed cases. This is accounted for by the relation of the kidney to the liver on this side.

Two anatomical facts help to explain the preponderance of the right over left kidney displacement. 1, The greater length of the right renal artery, and 2, the firmer attachments of the left kidney. The author has twice seen a movable kidney follow obstruction of the ureter. It happened that both of these cases were on the left side. The increased weight of the kidney due to accumulated urine and congestion must have played an important part in the etiology of the dislocation in these two cases.

In many cases of movable kidney there are no symptoms. In others, the symptoms are extremely distressing, producing great mental disquietude, as well as intense physical suffering. In a proportion of cases the symptoms are grave. Torsion of the ureter is common, partial occlusion by bending is not uncommon, inducing a distention of the pelvis by dammed up urine. Hydronephrosis may follow. Calculus is thus invited by reason of poor drainage. Apart from tumors of the kidney itself, the condition most likely to be mistaken for movable kindey is distended gall-bladder.

Nephrorrhaphy is not indicated in every case of dislocated kidney, but only in such cases as manifest distressing or dangerous symptoms. When gastro intestinal disturbance impairs the general health, when nervous symptoms are severe, when the dragging abdominal pains are constant, when disease of other organs is simulated, when hydronephrosis is threatened, when one or more attacks of torsion have occurred, the operation is imperative.

The author then outlined his method of operating on movable kidney, and closed his paper with a report of seventeen cases.

Acute Peritonitis.—Dr. Richard Douglas, of Nashville, read a paper with this title. Appreciating the condition under which the colon bacillus will escape from its natural habitat and become actively pathogenic, and knowing the supply is unlimited, the dose being governed alone by the integrity of the bowel, naturally we accord to this bacillus the first place in the causation of peritonitis.

In obedience to the teachings of experimental work, the surgeon must accept the classification of Pawlowski

of two forms of peritonitis. 1. That produced by chemical agents, with which we are not concerned. 2. That produced by infection. The latter is more tangible. It is fully in accord with our idea of the genesis of the disease. It harmonizes with clinical work. With Mordecai Price, the author agrees that every case of general peritonitis has a demonstrable cause, and that cause is septic in character. Pathological manifestations of peritoneal infection are subject to many variations which, in a great measure, indicate the virulence of the poison and guide us in forming a prognosis, but to simplify matters, the author considered it under two heads, which illustrated the microscopic and macroscopic changes the results of general peritonitis.

It is an indisputable fact that the type and virulence of the inflammation is largely dependent upon the origin, hence in our bed-side work we may consider the subject under the following etiological classification:

Infection from Without.—Immediate: This is direct infection of the peritoneal membrane through penetrating wounds of the abdomen, either accidental or surgical. Mediate: This form embraces all cases of contamination of the peritoneum occurring from extension of adjacent infected areas, as leakage from mural abscesses, or puerperal infection.

Infection from Within.—Immediate: Visceral perforation or rupture and direct inoculation of the peritoneal membrane with escaping contents, as in perforating typhoid or gastric ulcer, appendicitis, or rupture of gut and bladder. Mediate: Infection by emigration of micro-organisms through visceral wall of impaired resistance, as in incarcerated hernia, intestinal obstruction, ruptured ovarian cyst.

The author then reported a few illustrative cases. One case was reported of general purulent peritonitis. The patient recovered, and the author considers that it was due entirely to free incisions, thorough irrigation, and ample drainage.

THIRD DAY, THURSDAY, NOVEMBER 15TH.

History of Vaginal Extirpation of the Uterus.—DR. GEORGE J. ENGLEMANN, of St. Louis, read a paper on this subject, in which he stated that at the New Orleans meeting of the Association he was deeply interested in vaginal hysterectomy, which he presumed was a comparatively new operation with very recent modifications; but Dr. Lewis, of that city, called his attention to an old French pamphlet, showing that the operation had been done in the '20's. Since then he has found it was done still earlier, precisely as it is done to-day, the operation having developed step by step.

DR. LEWIS, of New Orleans, La., in the discussion stated that the first vaginal hysterectomy was performed by Dr. Dabourg in the little town of Autell, France.

Reminiscences of Dr. J. Marion Sims in Paris.—DR. EDMOND SOUCHON, of New Orleans, La., read a paper with this title (see p. 705).

Cancer of the Gravid Uterus.—DR. GEORGE H. NOBLE, of Atlanta, Ga., read a paper entitled, "A Case of Carcinoma of the Parturient Uterus, Removed Three Days after Confinement; Recovery." The woman had previously been confined, sustaining a laceration of the cervix uteri, which perhaps was a factor in the cause of the disease. In the first few months of the last pregnancy the patient was treated locally by her family physician, and there was nothing to cause a suspicion of malignancy. Almost the entire vaginal portion of the cervix was destroyed, less than one-fourth of its circumference remaining intact. The induration extended deep into the uterine tissue, but could not be felt beyond the limits of that organ. The roughened ulcerated surface was easily traced for a considerable distance within the cervix, the os being dilated to about five centimetres in diameter. Her condition was unpromising, and surgical interference was clearly interdicted, so the os and vagina were cleansed thoroughly and lightly dressed with gauze. She was then placed profoundly under the influence of morphia sulphate with a view of arresting labor, securing rest, and recuperation sufficient to permit evacuation of the uterus, which occurred spontaneously twelve hours later. The child was poorly nourished and lived only a few weeks, finally dying of inanition.

The main point in the paper was to show the feasibility of hysterectomy in the puerperal state for cancer of the uterus, as the case reported clearly demonstrated, even though it is too early to claim immunity from the return of the disease.

Ligation of Arteries.—DR. JOHN A. WYETH, of New York, reported two cases of ligation of the external carotid artery. The reason for narrating these two cases was to bring before the Association a consideration of the inflammatory changes which occur in arteries which have been ligated, and to discuss at length the best methods to pursue in these operations to secure the greatest safety to the patient.

In tying arteries, an important point to consider is the selection of a ligature. It seems to the author that in the animal ligatures, and especially in well-prepared and properly asepticized catgut is found the best ligature material. For the last ten years he had used catgut almost without exception, only once or twice using silk, and then in the ligation of the large venous trunk close to the root of the neck, in which he was fearful that the animal ligature might slip from the blood-pressure in the act of vomiting as the patients came out from under the influence of the anæsthetic.

Porta, in four hundred experiments, found that in from one to two years, seventy per cent. of catgut ligature had become absorbed, thirty-six per cent. of silk, sixty-six per cent. of hemp and flax, and twenty per cent. of horse-hair. Order of rapidity: catgut, hemp, silk, horse-hair.

Simultaneous Appearance of Cancer in Breast and Uterus.—This paper was read by DR. JAMES EVANS, of Florence, S. C. The subject of this interesting manifestation of the disease was a lady of fifty-three years of age, married, and the mother of six children. A striking peculiarity in the history of the case was, that when the disease was most active and destructive in the breast, it rather checked and retarded its tendency in this direction in the uterus. Excision of the cervix and removal of the breast were proposed, but declined.

The author closed by saying that although there is a very general concensus of opinion among surgeons that the most successful treatment of cancer affecting the breast and uterus is early and radical removal by the knife, yet it is doubtful in the opinion of the author if the operation is advisable when the disease appears in multiple form and in distant organs. When the disease is confined solely to the uterus and recognized at an early stage of its invasion, the prompt removal of the organ is usually followed by permanent recovery; in fact, recurrence less often takes place than removal from any other organ or part of the body.

Varicocele.—DR. W. E. PARKER, of New Orleans, reported seven cases of varicocele treated by incision, ligation, and shortening of the scrotum. An incision, varying in length according to the size of the varicocele is made, and the scrotum shortened by converting the wound from a longitudinal into a transverse one. All cases which recovered with union by first intention are still doing well, the period since the first operation being seven months. At the conclusion, he laid the following general indications for the treatment of varicocele. The milder form should be treated with a suspensory bandage with proper attention to diet, exercise, and bowels. A varicocele should be operated upon: 1. If it is of large size. 2. If it is painful. 3. If marked nervous symptoms are present. 4. If the testicle is atrophying. 5. If the varicocele is increasing rapidly. 6. If it is an obstacle to entering a public service. 7. If, on account of a

patient's occupation, a suspensory is troublesome and he desires an operation.

Fibroid Tumor of the Uterus with Suppurating Ovary Discharging per Rectum.—Dr. Rufus B. Hall, of Cincinnati, O., reported the following case: The patient, aged forty-four, was known to have a fibroid tumor for five years. She had suffered from sepsis for five weeks previous to the operation. In addition to the fibroid tumor was a large suppurating ovary holding about two pints of pus, which was discharged per rectum every eight or ten days. The suppurating ovary was densely adherent, and after its removal disclosed a large opening in the rectum. The operation included total extirpation of the fibroid uterus with the suppurating ovary, and repair of the intestinal rent. There was no leakage of the injured bowel after the operation. The patient recovered.

The speaker drew the following conclusions: The question of operation during sepsis is one that will admit of discussion both *pro* and *con*, but in the end it must be decided by the merits of the individual cases and not by rule. As to technique, total extirpation was given the preference, as it gives the ideal condition both theoretically and practically for after treatment. The Baer method was condemned, as it does not give thorough drainage—a thing absolutely necessary where there are extensive raw surfaces which have been bathed in pus, and no peritoneum to close off the general peritoneal cavity. The strengthening of the suture line with a tag of adventitious tissue was advised. The packing of the pelvis with gauze to protect the cavity from intestinal leakage, should any occur, and to prevent intestinal adhesions, was recommended. The gauze is usually removed on the fourth day and peroxide of hydrogen used as a wash for the cavity several times daily.

Again, forcible dilatation of the sphincter-ani muscle to cause incontinence, thus relieving the intra-intestinal pressure from accumulating gases, the doctor says, adds greatly to the chances for recovery. He first employed it for this purpose on February 6, 1893, in an operation for extra-uterine pregnancy with extensive bowel injury, the patient recovering. He says, as far as he knows, he is the first man to practice forcible dilatation for this purpose.

Pelvic Surgery.—Dr. J. G. Earnest, of Atlanta, Ga., contributed a short paper in which he reported some complicated cases of pelvic surgery. Two cases were detailed simply to illustrate a method of treatment that under certain circumstances is safer for the patient and just as apt to give relief of symptoms as total extirpation of the tumor; also to emphasize a growing conviction the author has that intestinal adhesions are frequently tinkered with when it would be best to let them alone. The essayist was no advocate of timid and imperfect surgery, but in cases where the tumor can be effectually dealt with without disturbing old, thoroughly organized adhesions, which the history and condition of the patient clearly show to be harmless, and in view of the fact that if those adhesions are loosened they will almost certainly anchor at some other point where they may be a source of constant annoyance, or even produce a fatal obstruction of the bowel, he believes it best to leave them undisturbed.

The Removal of an Intra uterine Fibroid Tumor by Morcellement without Hemorrhage.—Dr. Herbert M. Nash, of Norfolk, Va., read a short paper on this subject. In September, 1892, he saw in consultation Mrs. A——, aged about forty-two, the subject of intractable hemorrhages from the uterus, lasting from two to three weeks of each month, and which had been habitual for several years. The uterus could be plainly felt above the pubes, and by the conjoined method, sound, etc., the diagnosis of intra uterine fibroid was made. Not wishing at that time any radical procedure, she continued under the care of her physician, whose best efforts to control the hemorrhage proved fruitless. On July 11, 1893, she entered the hospital for surgical treatment.

On August 26th the essayist operated under ether. It was found quite impossible to dilate the os to the extent desired, but there was room enough for the manipulation without dividing the cervix, and no difficulty was found in seizing the presenting mass—the attachment of which to the uterine walls had been made out to be sessile—with a strong vulsellum. Upon making traction with some force, in order to determine the best method of procedure, the tissue gave way, and the withdrawn part of the detached mass was quite large, but no bleeding followed. This fact decided the doctor to proceed by morcellement, and with forceps, scissors, and the instrument he exhibited, the whole growth was removed piecemeal, and with only a slightly colored serous discharge. The previous packing had been so effectual that the growth itself, and indeed the uterine walls, appeared to have been exsanguinated. The fragments removed, when under strong compression, presented a mass of fibroid tissue nearly as large as an ordinary cocoanut. When the patient left the hospital the uterus had contracted firmly, and measured a fraction over three and one half inches in depth, occupied its proper position in the pelvis, and the patient is to day entirely well, with perfectly normal functions.

Election of Officers.—The following officers were elected: *President*, Dr. Louis McLane Tiffany, of Baltimore, Md.; *First Vice President*, Dr. Ernest S. Lewis, of New Orleans, La.; *Second Vice President*, Dr. Manning Simon, of Charleston, S. C.; *Treasurer*, Dr. Richard Douglas, of Nashville, Tenn.; *Secretary*, Dr. W. E. B. Davis, of Birmingham, Ala.

After introducing and adopting resolutions of thanks, the Association adjourned to meet in the city of Washington, D. C., the second Tuesday in November, 1895.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 14, 1894.

George C. Freeborn, M.D., President, in the Chair.

Spontaneous Rabbit Septicæmia.—Dr. Alexander Lambert reported a spontaneous outbreak of septicæmia hemorrhagica occurring among rabbits. Among the rabbits confined in the animal house connected with the pathological laboratory of the College of Physicians and Surgeons, there occurred in January, 1894, a large number of deaths from an unknown cause. These deaths were among the rabbits which had been operated upon, and among the healthy animals. The majority of these rabbits were fresh from the country, and had been confined but a few days in the animal house. Nearly thirty died within two weeks. Autopsies showed, in the majority of cases, a slight congestion of the lungs and an enlargement of the spleen. All the other organs were apparently normal. Cover glass smears and cultures of the heart's blood of several of these animals, gave a small bipolar stained bacillus, the morphology and biology of which, the speaker said, he would give later on in these remarks. In one case there was a universal exudative peritonitis. The exudate was largely fibrinous, with but little purulent fluid, and the intestines were matted together. The spleen was large and dark; the other abdominal organs were apparently normal. Both pleural cavities, and the pericardial sac, were filled with fibrinous exudate and purulent fluid. The lungs were congested.

In one other case the abdominal organs were apparently normal, except that the spleen was small and pale. Both lungs were, however, crowded and flattened against the vertebral column by an abundant exudate. The exudation in the right pleural cavity was reddish-yellow and fibrinous, and that in the left pleural cavity was a yellow purulent fluid. The pericardium was also filled with a yellow purulent fluid.

Cover-glass smears and cultures of the peritoneal and pleural exudates gave a bipolar stained bacillus, similar to that in the heart's blood of the other rabbits already

mentioned, and having the following characters: The bacillus was small and round-ended, the ends being more deeply stained than the centre. Sometimes the bacillus was uniformly stained, especially after being in contact for a long time with the staining fluid. These bacilli may present themselves as small ovoids, hard to differentiate from cocci. They stain easily with the anilin colors, but are decolorized by Gram's method. The size varies from 1.5 μ long by 0.56 μ broad, to 0.7 μ long by 0.49 μ broad, the average being 1.1 μ long by 0.53 μ broad. They appear single, and sometimes united in pairs or in rows of three to four elements. They are non-motile, and do not liquefy gelatin. In gelatin plates they form small, light yellow, finely granular, sharp-edged colonies, which, after a few days, usually show a darker yellow centre and concentric rings. The deeper colonies are of the same appearance. The colonies are often circular, often ovoid. Sometimes the colonies just below the surface seem to grow better than the surface colonies. In punctures in gelatin the growth usually commences just below the surface, extending in a thin, white, finely granular streak to the bottom of the puncture, the lower half of the growth being made of fine, separate dots. The upper half of the growth is formed by the coalescence of the small colonies. The growth remains slight. Sometimes there is a surface growth; when this occurs it is a gray-white, slightly raised growth extending but little around the puncture opening. In agar at 37.5° C., a thin, smooth edged surface growth occurs, extending not far beyond the inoculation line. This is a bluish-white by transmitted light, gray-white by reflected light. The growth extends to the bottom of a puncture, and slightly around the puncture opening. The growth is similar, but slower at room temperature. On Wurtz litmus, lactose agar, a good growth occurs, but with no change in the color of the litmus, and without formation of gas. In simple meat broth (one per cent. commercial peptone, one half per cent. salt, and meat infusion) the growth is abundant, causing a diffuse turbidity of the medium with a whitish ring around the edge at the surface of the broth, with an abundant grayish-white viscid sediment. At times the growth is more flocculent than at others. The broth remains turbid after two months. With growth for forty-eight hours at 37.5° C. in broth with one per cent. peptone, and half per cent. salt, the indol reaction is obtained by the addition of sulphuric acid without the addition of nitrites.

In a bent tube containing broth with one quarter per cent. peptone, one half per cent. salt, and two per cent. glucose, the medium becomes turbid, but no gas is formed, the growth occurring more abundantly in the open than in the closed end of the tube. In broth with 0.1 per cent. peptone, and 0.02 per cent. potassium nitrate, on addition of six drops of naphthalamine sulphate and a few crystals of sodium anilate, it gives a pink color, showing that it reduces the nitrates to nitrites. The bacillus grows in milk without coagulation, but with the formation of an acid.

As a rule, I have not been able to obtain any visible growth on potato, though a very slight invisible growth was proven to exist. The one exception to this rule was in the case of the rabbit with pleurisy without peritonitis. This single exception may have been due to some difference in the composition of the potato itself, as potatoes reacting 0.2 per cent., and 0.08 per cent. acid to phenolphtalein were used. A moderate growth was obtained in an anærobic hydrogen broth-tube.

To test the pathogenesis of the above germs, broth-cultures, grown for forty eight hours at 37.5° C., were used. Seven rabbits were given intra-peritoneal injections of 1 c.c. or 2 c.c. Two rabbits were injected with germs obtained from the heart-blood culture, 2 c.c. being given to each. Both were found dead in thirty hours. Two were injected with germs from the pleurisy cultures, one of them with 2 c.c. and the other with 1 c.c. The former was found dead in thirty hours, and the latter in thirty-six hours. Three were inoculated with germs from the peritonitis cultures, the first with 2 c.c., the second with 2 c.c., and the third with 1 c.c. The first animal was found dead in sixteen hours; the second rabbit remained alive; the third remained alive even after receiving, one week later, 2 c.c. more. The inoculations were made late in the afternoon, and on the following morning it was found that the animals had lost their appetite, that they remained crouching in a corner, and could not be made to run around, and that when laid on their sides they regained their crouching position with difficulty. When handled, they showed no evidence of pain. Two had a decided diarrhœa. The autopsies showed the animals emaciated; the bellies more or less distended; the inguinal and axillary glands enlarged and congested; the subcutaneous vessels over the abdominal wall filled with blood. Where the needle had passed through the abdominal wall was an area of purulent hemorrhagic œdema of considerable extent. In two cases this was very large. It did not infiltrate the abdominal wall itself to any great extent, but was superficial in the subcutaneous tissue. On opening the abdominal cavity, the intestines were seen to be adherent to the parieties, and glued together with purulent fibrinous masses. Over the surface of the large intestine were scattered petechial hemorrhagic spots, and large and small hemorrhagic areas. The small intestine did not, as a rule, show a hemorrhagic inflammation, though in one case it was very marked, the Peyers patches showing deeply infiltrated with blood, and the stomach on its greater curvature, and extending over on to the lesser curvatures, showing a great number of transverse hemorrhagic striations. The omentum always showed numerous hemorrhagic areas. The parietal peritoneum was congested. The fluid exudate varied from a slight increase of serous fluid to a large amount of turbid, purulent fluid, or bloody exudate. The spleen was invariably large and soft, and of a deep purple color. The liver and kidneys were normal in appearance. The lungs were sometimes normal in appearance, sometimes deeply congested. In two cases the pericardial sac was filled with turbid fluid. The thymus gland showed in all cases numerous hemorrhagic spots. The trachea and bronchi showed marked submucous hemorrhagic infiltration, except in the rabbit dead in sixteen hours, in which case they were normal. The spinal cord in the three cases examined showed petechial hemorrhagic spots on the membranes The brain of these three animals did not show any abnormal appearances.

The two animals which survived the inoculations were killed after ten days, they having shown no loss of appetite, or other symptoms. The one which had received 1 c.c., and then a week later 2 c.c. intra-peritoneally, showed no lesions whatever. The other having received 2 c.c., showed, at the seat of inoculation, a large subcutaneous abscess of yellowish white creamy pus. There was no œdema, and but very slight inflammatory changes around it. There were no other lesions. No cultures were made of this abscess, but cover-glass preparations gave the bipolar, stained, round-ended bacillus.

In the rabbits dying with peritonitis, cultures and cover-glass smears were made in all cases from the abdominal wall abscesses, peritonitic adhesions, spleen, left kidney, liver, and heart's blood, and in the two cases associated with pericarditis, from the pericardial exudate also. The cultures and cover-glass smears thus obtained showed pure cultures of the germ used for the inoculations.

Similar outbreaks of septicæmia among rabbits are described by Smith,[1] and Eberth and Mandry.[2] The germ so far described agrees very accurately with that isolated by Smith, in morphological appearance, size, culture, growth, and symptoms, and lesions induced in rabbits inoculated with pure cultures.

The bacillus of spontaneous rabbit septicæmia de-

[1] Smith: Journal of Comparative Medicine and Surgery, vol. viii., p. 24.
[2] Eberth and Mandry: Virchow's Archiv, Bd. 121, p. 340.

scribed by Eberth and Mandry, differs in its motility, culture, peculiarities, and pathogenesis for rabbits, and is a different, though closely related, micro-organism. The germ I have isolated also agrees in morphology, culture growth, and pathogenic peculiarities for rabbits, with the American swine plague bacillus described by Welch [1] in 1889. This germ appears to belong to the wide-spread family of bacteria which contains the chicken cholera of Pasteur, the rabbit septicæmia of Koch and Gaffky, the Wildseuche of Hueppe, the Rinderseuche of Kitt, the Schweineseuche of Schutz, the Buffelseuche of Oreste and Armanni, and the American swine plague.

The comparative studies of Caneva [2] and Bunzl-Ferdern [3] show the close relationship of the members of this group, and these authors consider some of them as probably identical. Hueppe [4] also believes in this probable identity, and classes these under one name, as the bacillus septicæmiæ hemorrhagicæ, from the form of septicæmia to which they give rise. Bunzl-Ferdern and Caneva further classify as belonging to the same family, but to another group, the bacillus of spontaneous rabbit septicæmia of Eberth and Mandry, the French swine plague at Marseilles, of Rietsch, Jobert and Martinaud, and the ferret plague of Eberth and Schimmelbusch.

As soon as it was appreciated that a plague was destroying the rabbits, all animals then in the animal house were removed, and the house and cages thoroughly washed out with a five per cent. carbolic acid solution. After a few days the animals were returned to their cages, and no further infection occurred.

Splenic Leukæmia.—Dr. W. P. Northrup reported a typical case of splenic leukæmia. The patient was a man thirty years of age, who had been sent to him by Dr. Toms, of Bellport, L. I., who had made the diagnosis. The man's work as an electrical engineer had exposed him to very high temperature, and to a high voltage of electricity. He had been in exceptionally good health up to six weeks before admission, at which time the present trouble was first noticed.

When first seen by the speaker his feet were greatly swollen, his skin was bronzed, his nasal respiration was greatly obstructed, and he was quite deaf. These symptoms were afterward decided to be due to adenoid growths, and to enlargement of the tonsils. There were numerous small nodules under the skin, and the parotid gland was prominent and very sharply defined. The cervical, supra-clavicular, axillary, and inguinal glands were also distinctly enlarged. The spleen was enormously enlarged, extending eleven and three quarter inches below the free border of the ribs. The ratio of the white blood-cells had been variously estimated by different observers as 1 to 3 and 1 to 4. They were largely mononuclear cells, small lymphocytes. There were few multinuclear cells. They were for the most part neutrophile; very few eosinophile. His temperature ranged from normal in the morning to 102° F., in the evening for the first week, and reached during the last five days of his illness a maximum of 103° F. The heart's action was rapid, but the pulse was full and of very lax tension. This was a very striking feature of the case. He also suffered from a marked hard swelling of the gums—a hemorrhagic gingivitis—very tender, with superficial ulcers. Night sweats were also quite severe. All that was accomplished by treatment was an improvement in the condition of the gums. Finally, he was taken with syncope, followed by marked delirium, coma, and death. When last estimated, the hæmoglobin was between thirty and thirty-five per cent.

The autopsy was made by Dr. George A. Tuttle, who found that the retro-peritoneal and mesenteric glands were enlarged. The liver was of the nutmeg variety, and weighed one hundred and one ounces, while the spleen, which was simply hypertrophied, weighed seventy-three ounces. The thymus gland was enormously hypertrophied. On section, it showed simple hyperplasia. There was no evidence of internal hemorrhage in the various cavities, as had been expected, but on the dura mater at the vortex were limited areas which appeared to be either localized pachymeningitis or lymphoid growths. There was nothing to indicate any change in the marrow of the bones. Specimens removed from the dura mater were exhibited.

Dr. James Ewing said that he had counted the blood-corpuscles in this case. At the first count there had been 425,000 white and 880,000 red, and on the second count, 430,000 white and 925,000 red blood cells.

Dr. Northrup also presented some white gall-stones which had been removed post-mortem from a gall-bladder. They were composed almost entirely of cholesterin.

A Frog with a Supernumerary Hind Leg was presented by Dr. J. S. Ely. The condition, he said, was a rare one, and had not been observed before at the college laboratory, although many frogs were kept there. The question arose—Was this frog an abnormal twin, or was this simply a dichotomy of one of the lower extremities? Bland Sutton says that all these dichotomies occur much more frequently in the lower animals than in the human subject, and he gives figures of both frog and toad showing such a condition.

The speaker said that, as to whether this was a "parasitic monstrosity" or not, he would say that, although the extra extremity seemed to be one extremity, there was at the distal portion a suggestion of there being two feet, there being six phalanges instead of five. When first seen, the frog was alive, yet no motion in the supernumerary limb had been observed, and no reflex movements could be excited.

Lipomatosis of the Heart.—Dr. James Ewing presented the specimen. The heart had been taken from a woman forty years of age, who had been received into the Roosevelt Hospital in a dying condition, so that no physical examination had been made. The heart showed the thickness of the muscle at the tip of the left ventricle to be less than one-sixteenth of a millimetre, and at the thickest portion half an inch. The muscular wall of the left auricle was almost invisible. The right side of the heart was similarly affected. There was a very moderate amount of interstitial myocarditis, and but little fatty degeneration of the muscle. The other viscera showed very advanced fatty degeneration. There was a phthisical process in the apex of one lung.

Thrombosis of the Auricle of the Heart.—The specimen was presented by Dr. George P. Biggs.

A laborer, thirty-nine years of age, was brought to the New York Hospital in an almost moribund condition, and consequently there was no clinical history. Some fluid was drawn off from the chest to relieve the urgent symptoms. At the autopsy, there was no subcutaneous œdema found. The peritoneal cavity was normal. Each pleural cavity contained about 500 c.c. of serous fluid, and the pericardium 250 c.c. of similar fluid. The heart was very greatly enlarged, and the cavities distended with blood to their fullest extent. This blood was almost entirely in the form of post-mortem clots. The distention of the cavities was greatest in the left auricle, the clot being fully as large as a man's fist. The dilatation markedly predominated over the hypertrophy. There was an unusually large appendage to the left auricle, and in this, and extending into the auricle, was a thrombus measuring 10 ctm. transversely, 4 ctm. vertically, and 2½ to 3½ ctm. antero-posteriorly. It was perfectly solid throughout, and distinctly stratified. The organ was enormously dilated, yet notwithstanding this the walls were considerably thickened. The mitral orifice was extremely narrow and the cusps were adherent, so that the orifice had been converted into a narrow slit, having extremely rigid walls. The left ventricle was very greatly dilated. The cusps of the aortic valve were thickened, and slightly retracted. The dilatation on the right side of the heart was marked, but not so ex-

[1] Welch: Johns Hopkins Bulletin, vol. i., December, 1889.
[2] Caneva: Centralbl. f. Bakterien und Parasitikenkunde, vol. ix., p. 557.
[3] Bunzl-Ferdern: Centralbl. f. Bakt. und Parasit. vol. ix., p. 787.
[4] Hueppe: Berliner Klin. Wochenscrift, 1886, Nos. 44, 45, 46.

treme as on the other side. The tricuspid orifice was so much relaxed that four fingers could be easily passed through it. There was also a large infarction occupying nearly one-half of one of the kidneys.

Stenosis of the Tricuspid Orifice.—Dr. Biggs then presented a specimen showing stenosis of the tricuspid orifice. In this heart the tricuspid orifice was narrowed so as to admit only two fingers with difficulty. It was removed from a woman aged twenty-seven, who had been in good health up to three years previously, at which time she had had an attack of acute articular rheumatism. She had recovered from this, but a few weeks before coming to the hospital had suffered a second attack. At the time of admission, the temperature was elevated; the heart was displaced; there were said to be double systolic murmurs present—one at the apex, and one at the base; there was slight pulsation in the veins of the neck. The urine showed only a trace of albumin at first, but later on the albumin reached as high as sixty per cent. She developed marked anasarca, and finally died with symptoms of uræmic poisoning. The chief features of the autopsy were the lesions in the heart, and an advanced chronic diffuse nephritis. The mitral, aortic, and tricuspid valves showed lesions of a similar character, consisting of some thickening, and of a number of small vegetations on the free border. The mitral valve admitted only one finger; the narrowing at the aortic and tricuspid orifices was not great. There were small thrombi in both auricular appendages in this case, and also behind the tricuspid valve. There were numerous infarctions in both lungs. The great point of interest was the appreciable narrowing of the tricuspid orifice.

Miliary Tuberculosis of the Liver.—Dr. Biggs presented still another specimen. It had been removed from a case of tuberculosis which had run a rather rapid course, with marked hectic symptoms and hoarseness. At the autopsy the larynx was found to be considerably ulcerated, and the lungs showed tuberculosis chiefly in the form of a large area of cheesy pneumonia, extending down one bronchus, and involving nearly two-thirds of the lower lobe. There were old lesions—small cavities and pigmented fibrous cicatrices—in both apices. The chief point of interest was the liver, which was very closely studded with small tubercles—a very diffuse miliary tuberculosis of the liver without similar lesions in the other organs visible to the naked eye.

The speaker said he had only seen this condition once before, and then in a case of tuberculosis presenting no unusual clinical features.

Dr. J. S. Ely said he had seen a large number of tubercles in the liver in guinea-pigs which had been inoculated with tubercle bacilli in the abdominal cavity. Of course, there was also a peritonitis under those circumstances. This had suggested to him that in the case under discussion the infection had gone to the liver by the portal circulation, and in that way had been filtered largely out of the blood.

What is the Status of the Ophthalmic Colleges?—In Chicago are two institutions, the so called ophthalmic colleges, which manufacture oculists and opticians *ad nauseam*. In either case, a course lasting six weeks suffices to lead to a diploma. This diploma is not a degree in medicine, in midwifery, in dentistry, or in veterinary science. It is *sui generis* and has no standing in law. If its possessor has been a registered physician who has complied with the medical practice act of the State in which he lives, he has a legal standing; but his diploma from the ophthalmic college does not of itself entitle him to practise. Dozens of graduates from these institutions are engaged in medical practice either as "opticians" or as "oculists." Under the circumstances we wish to know: What is the status of the ophthalmic colleges? Will the Illinois State Board of Medical Examiners please answer?—*Medical Fortnightly.*

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, November 22, 1894

MALCOLM McLEAN, M.D., CHAIRMAN.

Axis-Traction Forceps.—Dr. T. J. McGillicuddy exhibited an axis-traction forceps which he had devised in 1889, after a visit to Paris, where he learned that, because of certain objectionable features, the Tarnier forceps had been discarded, even by Tarnier himself. His instrument consisted of an ordinary Simpson forceps with the additional feature of short folding handles projecting backward at a right angle from the others. These shorter handles exerted traction in the axis of the brim. On folding them, the instrument could be used as the ordinary obstetric forceps. In an experience of over one hundred cases they had proven very satisfactory.

The advantages claimed by Dr. McGillicuddy for this instrument were: 1. That with its use axis traction is simple and uncomplicated. 2. That it is superior to Tarnier's, in the fact that while using it axis-traction at the superior strait is perfect. 3. That while in relation to Tarnier's instrument, a great deal has been said of the indicator, in this forceps the indicator is in the hands of the operator, and tells his *conscience musculaire* the direction of traction as well as the resistance. 4. That it does away with the trouble of Pajot's, Smith's or other methods, and in its use one has plenty of power and perfect control. 5. That it is easier to make rotation in the posterior positions with the adjunct handles, if it is thought best to use the forceps for that purpose. 6. That it is easy of application, and in its dual character it has all the advantages of axis-traction and the ordinary forceps, and saves the expense of buying two instruments where one will do.

The Tarnier instrument is complicated, cumbersome, and expensive, nullifying its good points—if it has any—and has been condemned by the Paris Obstetrical and Gynecological Society for these reasons. Its theory may be very pretty and interesting for those who have not had much experience in forceps delivery, but practically it is a useless and harmful instrument. No woman should be delivered except by axis-traction, and with these axis-traction handles you can determine the exact amount of resistance and the proper amount of force to employ, and readily and easily use it.

Dr. Leischman, in writing of the long forceps and high operation, says: "It is now very generally believed by those who have had the greatest experience, that a large proportion of the unfortunate results depend upon improper instruments, and especially upon the use of such as are deficient in power." The observations which on this point we have already quoted from Dr. Barnes, apply here with peculiar force. Power and control are co-relative factors toward the attainment of the result which we desire, and if there is a deficiency in the former, we can have but little confidence in the issue of the case.

With this forceps we pull directly in the axis of the brim. One cannot grasp the handles of the ordinary forceps with comfort with both hands and still make any great axis-traction. Most physicians say that the hands become cramped and lose all their muscular power after pulling for a short time.

In cases attended with some difficulty, who has not seen physicians with their feet placed against the side of the bed or the buttocks of the patient, hanging on to the handles of the forceps and pulling away with all their strength, while bathed in a profuse perspiration. These violent exertions are entirely wrong and unnecessary, as the arms alone should be used, and the body placed in a position where the traction can be easily arrested if there is any slipping of the blades. It is the improper use of the wrong kind of forceps that makes it such fatiguing and dangerous work.

Dr. E. A. Tucker said that axis-traction meant nothing more than pulling in the axis of the parturient canal, and without it he could not understand how delivery could be effected. He believed that he could get as good axis-traction without complicated mechanism as with. He had used the Tarnier instrument many times, but had since utterly discarded it, and his feelings were about the same with regard to all such instruments. The obstetrician was apt to trust too much to the instrument, and not to his own sense of the proper direction in which to pull. One should be able to deliver with traction exerted by one hand, if at all. The mistake was commonly made of hurrying things after applying the forceps, instead of giving the head time to mould. He had given even as long as fifty minutes after applying the forceps, thirty of which were consumed in moulding the head before any advance was made.

Dr. Marx thought well of axis-traction instruments, which he believed were being used more instead of less in this country.

Dr. Collver and others also made some remarks.

Chloroform Bottle.—Dr. E. A. Tucker exhibited a chloroform bottle which he had found in use among firms who handled acids, the glass stopper being so formed as to permit of escape of the fluid by drops or in a stream, as might be desired. He said it was cheaper and better than the bottle he had devised and shown to the Section some months ago.

Nymphfebulation. — Dr. Herman L. Collver exhibited photographs of a case of nymphfebulation, or locking of the nymphæ, practised on the young woman by her husband during his periods of absence. She had come from Germany, was twenty-eight years of age, had been married ten years. She had known her husband before marriage in the old country, and when she came to meet him here he resorted to this method of keeping her out of mischief while he was away. He first perforated the labia minora, and after the pain and swelling had diminished he introduced a small padlock, which he would remove on his return. He had practised this five years. Dr. Collyer said he had known of cases where buckles had been fastened over the labia, but this was the only one known to him of perforating and locking them together.

Entanglements and Shortening of the Umbilical Cord.—Dr. T. J. McGillicuddy read the paper. Probably in twenty-five per cent. of all labors the cord was either around the neck or in some other abnormal position which it assumed during the movements of the fœtus. It might cut off the blood supply and thus cause death of the fœtus; where the cord was unusually long it might be found wrapped two or more times around the neck, or around the neck, shoulders, and body. The author related two cases of death in the early months from constriction of the cord, in one the cord being found wound around the neck three times, in the other encircling the shoulder and body as well. A third pregnancy had gone to about term before the strangulation had taken place, due to the cord drawn tightly around the neck once. In the fourth case the woman had been in labor thirty-four hours. On extracting the child it was found in a state of decomposition, the cord around the neck and shoulder. A fifth case of death of the fœtus was related, then a sixth case in which the shortening of the cord produced by being wound around the neck, had resulted in acute inversion of the uterus fourteen hours before he saw the patient. Some other cases were referred to in literature, and then attention was called to the medico-legal interest of such cases, for the mother might be charged with strangling her newly-born, when in reality the strangulation had taken place in utero from winding of the cord about the neck. He also thought it was a cause of hemorrhage by traction on the cord thus shortened. He had seen an infant with the cord wound four times around its neck. In every labor he felt for it as a possible complication. Excessive pulling upon the cord sometimes caused flexion of the head upon the sternum and prevented the occiput from presenting. The abnormal position of the cord also favored exhaustion of the mother from delayed delivery. Labor was easier in the sitting or squatting posture, and it tended to relieve the cord to a certain extent.

A Pathetic Case.—Dr. A. Palmer Dudley had seen a few cases in which the cord was wound around the neck of the child one or twice. In one the woman had been infected by syphilis from her husband, had had several abortions in consequence before he saw her and discovered the syphilitic history and gave iodide of potassium. He succeeded in carrying her along to near term, when one night she was suddenly awakened by a rat gnawing at her face. In her fright she jumped completely over in bed, and from that time ceased to feel fœtal movements. Dr. Dudley instituted labor, but the child was born dead, having the cord wrapped twice around its neck, where it had left a blue line. They feared for the mother's reason, and she died suddenly some days later, exact cause unknown.

Spontaneous Rupture of the Cord.—Dr. Simon Marx said there were only two cases of spontaneous rupture of the cord known to him. One, mentioned by Dr. McGillicuddy, having come under his own observation, and undoubtedly due to the presence of a gumma in the cord. The woman was syphilitic. Entanglement of the cord was quite common. If around the neck at labor, the propriety of tearing or cutting it and extracting rapidly arose; otherwise strangulation might occur from tension.

Dr. E. A. Tucker thought the diagnosis of shortening of the cord or threatened strangulation could be made by careful study of the case. Umbilical souffle, rapid beating of the fœtal heart, and tumultuous movements were an aid. Where possible, he slipped the cord over the head when wound around the neck, but failing in this, he extracted quickly, and had not lost a child.

The Chairman spoke of interference with natural rotation where the cord was wound around the neck or shoulders. In this way many cases of obstinate posterior positions could be accounted for. The remedy was to unwind the child in the opposite direction, turning it completely around.

Surgical Treatment of Anteflexion of the Uterus.—Dr. Charles Bell White read the paper. A sharp bend in the axis of the uterus, which could not be straightened by the finger or by bimanual palpation, was accompanied in some cases by retroposition, in others by descent of the uterus. In both forms the cervix was apt to be elongated and the case likely to be mistaken for ordinary retroversion. He thought the condition began with menstruation, the heavy uterus, lacking in tone and support, becoming bent forward and gradually becoming fixed in that position. Dysmenorrhœa was attributed to interference with circulation, not to obstruction of the outflow from the uterus. The ordinary forms of surgical treatment comprised divulsion, curettement, amputation of the cervix, salpingo oophorectomy. He did not know that anyone had advocated lifting the uterus and fixing it in the new position. He had so treated one case. The girl had suffered greatly, and as other means had failed, he resorted to laparotomy, expecting to find the utero-sacral ligaments taut and the cause of the retroposition of the anteflexed uterus, but was surprised to find them relaxed. Lifting the uterus, he noticed that it straightened the bend, and therefore he fastened the fundus to the anterior wall. The result had been complete relief. Alexander's operation of shortening the round ligaments would not lift the uterus and straighten it. He would advise anterior fixation only in severe cases.

Dr. W. E. Porter would treat anteflexion and the dysmenorrhœa accompanying it by such measures as divulsion, Wylie's stem drain, tampon, boro-glyceride.

Dr. Collver did not think so severe an operation as laparotomy justifiable; that cases could be relieved by other measures. He would not introduce a stem, but would rely upon gauze for drainage.

Dr. Jarman had seen the case reported by Dr. White, and approved of the treatment where other measures failed to give relief from severe symptoms. Ventral fixation was preferable to taking a reef in the round ligaments within the abdomen, as suggested in the remarks of Dr. Porter, for the reason that these ligaments might stretch sufficiently to let a knuckle of gut fall between the uterus and abdominal walls, and become strangulated.

Dr. A. P. Dudley explained the dysmenorrhœa on the basis of interrupted circulation, which also was a causative factor of the original condition. The difficulty with Dr. White's operation was to obtain consent to its performance from the patient.

Dr. White closed the discussion.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MEDICO-CHIRURGICAL SOCIETY — ACTINOMYCOSIS — PATHOLOGICAL SOCIETY—MALIGNANT DISEASE OF LARYNX—ACUTE SEPTIC EPIPHYSITIS—MALIGNANT DISEASE OF GROIN AND SECONDARY DEPOSITS—EPITHELIOMATOUS CYSTS—WOLFFIAN ADENOMA OF KIDNEY.

London, November 28, 1894.

The Societies are making heavy demands on our time and attention just now, though it often happens that some of the most interesting are ill adapted for a brief report.

At the last meeting of the Medico-Chirurgical there was a discussion on actinomycosis, which interested especially the dermatologists but which cannot be profitably reduced to a paragraph, and the paper on which it was founded was hardly worth summarizing.

At the Pathological Society there was an interesting exhibition of a number of specimens, and the reports of the cases gave rise to some valuable remarks. Thus Mr. Stephen Paget showed one of malignant disease of the larynx of a man aged sixty-four. A question arose as to whether it could be a sarcoma or carcinoma, and it was referred to the Committee on Morbid Growths.

Mr. Stephen Paget also showed a specimen of acute septic epiphysitis from a boy aged thirteen. A member questioned the correctness of the name, and suggested it was a case of acute pyæmia from the first, the wound being probably inoculated with a streptococcus.

Mr. C. A. Morton showed a malignant growth in the glands of the groin following the subsidence of a painful enlargement of the glands, with secondary growths in the skin at a distance from the primary tumor. The glands of both groins were enlarged and very painful, and then, on the subsidence of this condition, malignant growth appeared in those of one side. The patient was a man, aged forty one. Many months later a similar growth appeared in the glands of the other groin, and secondary growths in the skin and subcutaneous tissue of the abdominal wall, and in the lungs. The spleen was not affected. There was no source of primary infection. The histology of the growth was that of sarcoma rather than lymphadenoma; but the clinical history suggested that the disease was not simply primary sarcoma of the glands.

Mr. Bowlby showed an epitheliomatous cyst of the neck from a man, aged fifty-eight; the tumor had been noticed about two months before death. A similar specimen was shown by Mr. F. C. Wallis. The patient was sixty years of age, and noticed the swelling six weeks before he went to the hospital, in January last, when the swelling was the size of an orange. The growth eventually fungated, and the man died. A section showed typical squamous-celled carcinoma.

Mr. Bland Sutton said these cases were of great clinical importance on account of the rapidity with which they proved fatal. They had been described by German writers as "branchiogenous carcinoma," and by English pathologists as "malignant cysts." If these tumors arose in the bronchial clefts they would probably appear in infancy or youth, and not after mid life. He regarded the cervical lesion as secondary, the primary lesion being some small neoplasm hidden away, perhaps in a pharyngeal recess, and easily overlooked. One he had seen had this origin.

Mr. Shattock doubted if the epithelioma in a bronchial cyst was usually squamous. He had recently investigated a case and found that the epithelium was columnar and ciliated.

Mr. Shattock also exhibited microscopic sections of large adenoma of the kidney of a child, and discussed the reasons for thinking that such growths arose in the Wolffian body; he did not himself see that any proof had yet been adduced.

"ORIGIN OF THE TERM ANÆSTHETIC."

To the Editor of the Medical Record.

Sir: I notice, in your issue of December 8th, an account of a conversation upon this point, between Mr. Edgar Willett and Dr. Oliver Wendell Holmes, when the latter was in England, in 1886.

It is quite possible that Dr. Holmes had forgotten that he had written to Dr. Morton a letter elaborately analyzing the varied appropriateness of several names, and I take pleasure in sending to you from among my father's correspondence a copy of Dr. Holmes's original letter, exactly corroborative of the conversation above referred to. Dr. Holmes's letter reads as follows:

"Boston, November 21, 1846.

"My Dear Sir: Everybody wants to have a hand in a great discovery. All I want to do is to give you a hint or two, as to names, or the name, to be applied to the state produced and the agent.

"The state should, I think, be called 'anæsthesia.' This signifies insensibility, more particularly (as used by Linnæus and Cullen) to objects of touch (see 'Good-Nosology,' p. 259). The adjective will be 'anæsthetic.'

"Thus we might say the state of anæsthesia, or the anæsthetic state. The means employed would be properly called the anti æsthetic agent. Perhaps it might be allowable to say anæsthetic agent, but this admits of question.

"The words anti-neuric, aneuric, neuro-leptic, neurolepsia, neuro etasis, etc., seem to be anatomical; whereas the change is a physiological one. I throw them out for consideration.

"I would have a name pretty soon, and consult some accomplished scholar, such as President Everett or Dr. Bigelow, Sr., before fixing upon the terms, which *will be repeated by the tongues of every civilized race of mankind.*

"You could mention these words which I suggest for their consideration; but there may be others more appropriate and agreeable. Yours respectfully,

"O. W. Holmes.

"Dr. Morton."

When the young child now known as anæsthesia had been born into the world by the public demonstration of a painless capital operation at the Massachusetts General Hospital, October 16, 1849, it had no name, and none could be immediately found for it, since the language of the day had not as yet been called upon to express the act or the state produced by the act. It was necessary to christen it. Accordingly, a meeting was held at the house of Dr. A. A. Gould, at which were present Dr. Henry J. Bigelow, Dr. O. W. Holmes, and Dr. Morton, and Dr. Gould read aloud a list of names which he had prepared. On hearing the word "Letheon," Dr. Morton exclaimed, "That is the name the discovery shall be christened." Dr. Gould and the others also favored this name, derived from the mythological river

Lethe. But after a subsequent consultation with Dr. Holmes and a consideration of the terms suggested by him in the above letter, Dr. Morton adopted the terms anæsthesia, anæsthetics, and "etherization," the terms now in common use.

While upon this subject it may interest your readers to read another letter of Dr. Holmes's, written forty seven years later on—in fact, only a few months before his death—wherein no failure of his vigor or felicity of expression is wanting. This letter, now in the possession of the writer, has been published only in part, in the August number of the *Century Magazine* of the present year, in an article entitled "Dr. Morton's Discovery of Anæsthesia." It reads as follows:

"Boston, April 2, 1893.

"My Dear Sir: Few persons have or had better reason than myself to assert the claim of Dr. Morton to the introduction of artificial anæsthesia into surgical practice. The discovery was formally introduced to the scientific world in a paper read before the American Academy of Arts and Sciences by Dr. Henry J. Bigelow, one of the first, if not the first, of American surgeons.

"On the evening before the reading of the paper containing the announcement of the discovery, Dr. Bigelow called at my office to read the paper to me. He prefaced it with a few words which could never be forgotten.

"He told me that a great discovery had been made, and its genuineness demonstrated at the Massachusetts General Hospital, of which he was one of the surgeons. This was the production of insensibility to pain during surgical operations by the inhalation of a certain vapor (the same afterward shown to be that of sulphuric ether). In a very short time, he said, this discovery would be all over Europe. He had taken a great interest in the alleged discovery, had been present at the first capital operation performed under its influence, and was from the first the adviser and supporter of Dr. W. T. G. Morton, who had induced the surgeons of the hospital to make trial of the means by which he proposed to work this new miracle. The discovery went all over the world like a conflagration.

"The only question was whether Morton got advice from Dr. Charles T. Jackson, the chemist, which entitled that gentleman to a share, greater or less, in the merit of the discovery.

"Later it was questioned whether he did not owe his first hint to Dr. Horace Wells, of Hartford, which need not be disputed. Both these gentlemen deserve 'honorable mention' in connection with the discovery, but I have never a moment hesitated in awarding the essential credit of the great achievement to Dr. Morton. This priceless gift to humanity went forth from the operating theatre of the Massachusetts General Hospital, and the man to whom the world owes it is Dr. William Thomas Green Morton.

"Experiments have been made with other substances besides sulphuric ether, for the production of anæsthesia. Among them, by far the most important, is chloroform, the use of which was introduced by Sir James Y. Simpson. For this and for the employment of anæsthetics in midwifery he should have all due credit, but his attempt to appropriate the glory of making the great and immortal discovery, as revealed in his contribution to the eighth edition of the 'Encyclopædia Britannica,' is unworthy of a man of his highly respectable position. In the ninth edition of the same work his article 'Chloroform' is omitted and a fair enough account of the discovery is given under the title 'Anæsthesia.'

"Yours very truly, O. W. Holmes."

I am, yours very truly,

William J. Morton.

New York City, December 9, 1894.

Female Apothecaries.—Paris has only one apothecary shop controlled by a woman, while Brussels has five. London had 1,340 female apothecaries in 1891.

LOCALIZATION OF VISUAL CEREBRAL CENTRE.

To the Editor of the Medical Record.

Sir: In the Medical Record for December 1st, there appears an article entitled "A Contribution to the Study of the Location and Physiology of the Visual Cerebral Centre," which is so misleading in its conclusions, that it seems justifiable to call your attention and that of your readers to its errors. Since the appearance of Nothnagel's classical work on Cerebral Localization, it has been agreed that the only facts upon which reliance can be placed in determining the location of function in the brain are to be derived from cases of small lesion of long standing with accurate autopsy.

The entire tendency of recent investigation upon the visual area of the brain, as shown in Henschen's great works, "Pathologie des Gehirns" (1893) and Vialet, "Les Centres Cérébraux de la Vision" (1893), and Noyes, "Diseases of the Eye" (1894), is to prove that the primary cortical visual centres lie about the calcarine fissure in the occipital lobe, that the angular gyrus has nothing whatever to do with vision, and that there is no lesion behind the optic chiasm, either in thalamus or visual radiation or cortex anywhere which will produce a blindness in one eye alone. All lesions posterior to the chiasm produce homonymous hemianopsia. The entire consensus of opinion is opposed to the view first advanced by Ferrier and the English school, that blindness in one eye can be produced by a cortical lesion, and the only case with autopsy, cited by Gowers, is unsatisfactory and inconclusive, because of an imperfect clinical examination of the visual field.

In the article which I beg leave to criticise, the author has failed to recognize this consensus of opinion, citing only the English case. He reports a case without autopsy, which is manifestly inconclusive, and which an ordinary observer would easily recognize as a case of hysterical blindness, regarding the nature of which theories abound but knowledge is wanting; the recovery alone being sufficient to prove that no serious localizable cerebral lesion was present.

Fearing that the readers of your journal might be misled by this article, I have taken the liberty to point out its fallacies.

Yours very respectfully,

M. Allen Starr.

22 West Forty-eighth Street, December 4, 1894.

Medical Items.

A Fight for a Tooth.—A peculiar case occurred lately in Gera, and has not yet been definitely decided. A gentleman who had suffered for some time from toothache consulted a dentist, and on his advice consented to have the offending molar extracted. This was skilfully effected, not without some trouble, for the tooth proved to be a perfect monster in size, with roots measuring as much as two centimetres. The dentist was naturally desirous of preserving such a trophy, and, although the patient claimed the tooth as his property, refused to part with it. An action was accordingly commenced on the charge of defraudation, the defendant claiming he acted by the right of a time-honored custom, and that the tooth on being removed was a *res nullius*, and belonged to the first who took possession. I am afraid this will prove quite a difficult quibble to settle.—Berlin Correspondent *Occidental Medical Times*.

A Thirty-Pound Man.—Abner Astrop, a dwarf, died recently at his home in Johnson County, Ky., at the age of fifty-two years. His weight was but thirty pounds, and he was two inches less than three feet tall. His parents established him in a small cross-roads store when he was twenty years of age, and he spent his life in it, refusing to exhibit himself in museums.

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IS IT THE BEGINNING OF THE END?

BY JAMES WEIR, JR., M.D.,
OWENSBORO', KY.

WHEN we come to examine the history of the world we find evidence that certain nations have, at times, reached a high state of prosperity, and have then degenerated to such a degree that they have either passed entirely out of existence, or have lapsed into a state of semi-barbarity. This has generally been brought about by conquest, but the races conquered had first become enfeebled by their habitudes of thought and manner of living. It is a well-established fact that luxury brings debauchery, and that debauchery occasions degeneration. All nations that have, heretofore, reached the zenith of their prosperity, have been engulfed, at some time or other, in the maelstrom of luxurious habits, and have fallen under the lethal influence of a degeneration occasioned solely by debauchery; for the luxury and debauchery of one class brought increased poverty on, as well as excess in, other classes, and poverty and excess are prominent factors in the production of degeneration, as we shall see further on in this paper. Says the brilliant author of "Psychopathia Sexualis," Krafft-Ebing: "Periods of moral decadence in the life of a people are always contemporaneous with times of effeminacy, sensuality, and luxury. These conditions can only be conceived as occurring with increased demands upon the nervous system, which must meet these requirements. As a result of increase of nervousness, there is increase of sensuality, and, since this leads to excesses among the masses, it undermines the foundations of society—the morality and purity of family life. When this is destroyed by excesses, unfaithfulness, and luxury, then the destruction of the state is inevitably compassed in material, moral, and political ruin."

Such was the condition of the Latin race when the fierce and hardy Vandals overran the Roman peninsula; such was the condition of the Assyrians when Babylon fell beneath the onslaughts of the great Macedonian; such was the condition of the Egyptians when the northern myriads swept down upon the fertile valley of the Nile and destroyed forever the once powerful and all conquering kingdom of the Pharaohs; and such, too, was the condition of the French nation in 1794, when Anarchy unfurled its red banner at the head of the most gigantic social revolution the world has ever known. At the present time, community of interests, as well as higher civilization, would utterly forbid the total subjugation of one civilized nation by another, such as occurred in the olden times; hence no nation need fear annihilation from such a source. The danger comes from another point and consists in the almost certain uprising, at some time in the future, of degenerate individuals in open warfare and rebellion against society.

The question whether the world is growing better or worse is often debated, and can be answered affirmatively on both sides. Better, because superstition, bigotry, and dogmatism have given way, to a great extent, to the tolerance and freedom of higher civilization and purer ethics in normal, healthy man; worse, because crime (and I mean by crime *all* antisocial acts) has greatly increased on account of the pernicious influence of degeneration. That superstition, bigotry, and dogmatism are on the wane, and that they will, sooner or later, be entombed in that depository of obsolete savage mental habitudes—absolute and utter oblivion—a glance at the success that science has achieved in the warfare waged against it by the Church, will at once declare. (Throughout this article I use the word Church to express priests of any and every denomination, whether Jew, Gentile, or Pagan, Protestant or Catholic.) A short incursion into this subject, *i.e.*, the Church's warfare on science, is absolutely necessary, for the triumph of science over its enemies—superstition, bigotry, and dogmatism, coincidently, ignorance and illiterateness—shows that the civilized world, at the present time, is markedly different in some respects from the world of ancient, mediæval, and even comparatively recent times; and, in summing up, this changed condition will be a weighty factor in making up an answer to the question which heads this paper.

When Olympus first faded away from the enlightened eyesight of the Greeks, and changed into space besprinkled with stars; when Zeus no longer held his divine court on its mystic summit; when oracles became mute and the fabled wonders of the "Odyssey" either vanished or resolved themselves into prosaic commonplaces under the investigations of the sceptic or the accidental discoverer, the Church made a most strenuous protest against the destruction of its traditions. Some of these early seekers after truth were killed and their goods confiscated. The Church issued its edict against heresy (and any doctrine that taught a belief antagonistic to the accepted tenets of pagan mythology and theogony was heresy), and hurled its anathemas against the heretic. Olympus, in the eyes of the Church, still existed, and Zeus, the man-god, still quaffed the sacred ambrosia in its shady groves. The Sirens still sang their entrancing songs, while Scylla and Charybdis were ever stretching out eager arms toward unwary mariners. Gigantic one-eyed Cyclops, with Polyphemus as their leader, still patrolled the shores of Sicily and kept their "ever-watchful eyes" turned toward the open sea. The hardy Greek sailor landed on the Cyclopean island, and discovered that Polyphemus, and Arges, and Brontes, and Steropes, and all the other one eyed monsters were nothing but sea-wrack, bowlders, and weeds. He sailed farther, past Scylla and Charybdis, and discovered no greater dangers than sharp rocks and whirlpools. Yet farther he sailed out into the mysterious sea, and the only Siren's song he heard was the whistling of the wind through the cordage of his vessel. In vain the Church thundered against the daring investigator. Neither fire, nor sword, nor imprisonment, nor death itself, could check the march of truth. Mythology and pagan theogony had received their death-blows; superstition, bigotry, and dogmatism were elbowed aside and gave place to dawning science. The Church held that that which had been believed by pious men for untold ages must necessarily be true. Science, in the garb of philosophy, with cold, dispassionate criticism proved that these hitherto accepted truths were arrant fallacies. The poets and writers then took up the subject, and finally the people fell into line, so superstitious, bigoted, dogmatic mythology died, intellectuality took its place, and higher civilization took a step forward.

With every new discovery, with every victory over superstition, bigotry, and dogmatism, civilization took a

step upward until it stands to day as far above the civilization of those old days as do the giant stems of the mighty red-woods above the chaparal and undergrowth of the California forests. In its battle with superstition civilization has grown strong, hardy, and, above all, vigilant. This last quality it will need most of all in its coming battle with the combined hosts of antisocial degenerates. In its battle against the Church civilization has gained the right to think for itself. It has demanded, and is now receiving, to some extent, the right of education, of erudition; and education is, and will be, a most potent warrior against degeneration.

That a luxurious manner of living eventually leads to debauchery, and that debauchery is a prime factor in creating degeneration, no physiologist of the present day will for one instant deny. I wish to show, in this paper, that luxury is hurrying us toward a social cataclysm, beside which the downfall of the Roman Empire, the destruction of ancient Egyptian and Babylonian civilizations, and the bloody days of the French Revolution, will sink into utter insignificance.

A brief *résumé* of certain historical epochs will be necessary in order to furnish a parallel from which I wish to draw several indisputable and incontrovertible conclusions.

The Roman people, under the leadership of its ancient heroes, was a nation of hardy warriors and husbandmen. That pre-eminent military genius, Julius Cæsar, had carefully fostered this warlike spirit in the bosoms of his compatriots, and by a series of brilliant campaigns had made the Roman nation the most powerful on the face of the globe. The Roman legions were not only victorious on land, extending their conquests into Iberia, farther Gaul, and still farther Britain, but the Roman triremes also swept the Mediterranean, from the Pillars of Hercules to the shores of Syria and Egypt. Wealth poured into the country from all sides and the people revelled in a boundless prosperity. Luxury had already begun to enervate the hardy soldiery at the time of Cæsar's assassination, yet not enough to show degeneration and demoralization. The empire under the first emperors steadily grew richer and more powerful, and the luxury of the rich more unlimited and licentious. At length a change can be noticed. The Roman legions, hitherto victorious over every foe, are now frequently vanquished; conquered tribes uprear the standard of revolt and refuse to pay tribute; the territorial boundaries of the empire materially shrink, and its once-conquered provinces pass out of its dominion forever. The gradual degeneration of this nation is faithfully mirrored in the characters of the emperors who governed it. Nero, Caligula, Tiberius, Caracalla, and Messalina, the depraved wife of Claudius and daughter of Domitia Lepida, herself a licentious and libidinous woman, were but accentuated types of the luxurious and debauched nobility. Not only did the nobility become victims of degeneration, but the poorer classes also lost their virility, until at last we find the stability of the nation preserved through the instrumentality of foreign mercenaries. The greatness of this once wide-spread empire dwindled away, the freedom of its institutions contracting along with its shrinking boundaries, until we find it lapsed into a state of barbarian despotism under the son of Aurelius; and, had it not been for outside influences, it would have eventually fallen into a state of utter and complete savagery.

Now, let us turn to a much older civilization. When the first conquerors of Egypt, about whom history can tell us so little, first occupied the fertile valley of the Nile, the country, in all probability, was inhabited by negroes. This conquering race drove out or enslaved the native population and founded the ancient kingdom of Egypt. This kingdom waxed strong and mighty until at the time of Rameses the Great, three thousand two hundred years ago, it was the most powerful monarchy in the whole world. This mighty son of Ra, Meiamoun Ra, or Rameses, as he is most generally styled, was a warrior and a statesman. He led his victorious troops north, east, and west, conquering nations as he went, until he dominated and brought into a state of vassalage over two-thirds of the then known world. Wealth flowed into his kingdom from all the surrounding countries, consequently luxury, with its never-failing associate, debauchery, made their appearance and the decadence of this mighty kingdom set in. It is true that many Pharaohs reigned after Rameses, and that the monarchy maintained its greatness for a long period of time; but luxury had taken hold on the people at the time of their greatest prosperity and had sown the seeds of degeneration, which flourished and grew apace, until the emasculated and effeminate people yielded up their independence to the conquerors, and passed out of existence as a nation forever.

Now, let us turn to a recent civilization. At the time of Louis XVI. the French nation was thoroughly under the influence of degeneration consequent to a luxury and licentiousness that had had a cumulative action for several hundred years. The peasantry and the inhabitants of the faubourgs, owing to their extreme poverty, itself a powerful factor in the production of degeneration, had lapsed into a psychical state closely akin to that of their savage ancestors. The nobility were weak and effeminate, the majority of them either sexual perverts, or monsters of sensuality and lechery. The middle class, then as ever the true conservators of society, seeing this miserable state of affairs, attempted to remedy it. Not fully understanding the dangers of such a procedure, they allowed the degenerate element to share in their deliberations. Their moderate and sensible counsels were quickly overruled by their savage associates, who brought about a Reign of Terror (with such psychical atavists as Marat, Danton, and Robespierre at its head), the like of which the world had never seen before nor has ever experienced since. I have demonstrated, in the three instances of history cited above, that degeneration has invariably followed luxury, and that a social and political revolution has been, invariably, the result of this degeneration; therefore, as we ourselves are entering upon an epoch closely akin to the three several epochs just mentioned, it will be well for us to study the phenomena that bring about such revolutions.

It is conceded by everyone that man completed his cycle of physical evolution many thousands of years ago. Since his evolution from his pithecoid ancestor the forces of nature have been at work evolving man's psychical being. Now, man's psychical being is intimately connected with, and dependent on, his physical being, therefore it follows that degeneration of his physical organism will necessarily engender psychical degeneration. Hence, if I can prove that man, by leading a life of luxury or one of poverty and want, produces physical degeneration, it will naturally follow that psychical degeneration will also accrue; and, as one of the invariable results of degeneration is atavism or reversion, both physical and psychical, the phenomenon of a social revolution characterized by pronounced savagery and barbarity, in which society is overthrown and anarchy instituted in its stead, will no longer appear strange and unnatural.

Neurasthenia, or the loss of nervous tonicity, is a prime factor in the production of degeneration. The offspring of neurasthenic parents always show degeneration in some form or other. That luxury produces neurasthenia can be demonstrated beyond the shadow of a doubt. Nine-tenths of the clientèle of the gynecologist is derived from the wealthy, luxurious, and fashionable class. The same may be said of the neurologist and alienist. Paresis and kindred forms of insanity are, almost exclusively, forms of degeneration affecting wealthy people, while the proportion of sexual perverts among the rich is remarkably high.

Let us see if we cannot discover some of the factors in the causation of such wide-spread and abundant neuroses among those fashionable and luxurious individuals who arrogate to themselves the title of "Society." Man is, naturally, a diurnal animal, but the fashionable

world has reversed the natural order of things and has made him a nocturnal animal. Now, the long continued influence of artificial light exerts a very deleterious effect on the nervous system; hence it is not to be wondered at that so many men and women of society are neurasthenic. Not only are those individuals who, voluntarily and preferably, spend the greater portions of their lives in artificial light, rendered nervously irritable, but those also who are driven by force of circumstances to turn night into day are likewise afflicted. Several years ago I met a distinguished editor at Waukesha, who was suffering greatly from nervous exhaustion. He told me that he was so situated that he did all of his work at night, often writing until three o'clock in the morning. I advised him to quit this and to do his editorial work during daylight. Not long after he wrote me that he had followed my advice, and that he was a new man in point of health. The loss of nervous vitality makes itself evident by a feeling either of exhaustion or irritability. The fashionable devotee, in order to counteract this, either stimulates the system with alcohol, or exorcises the "fidgets" by the use of sedatives, such as chloral or morphia. The baneful effects of such medication are not at once appreciable, but if continued for any length of time they will eventually result in a total demoralization of the nervous system. Time and again have I seen fashionable men and women, at the close of the season, veritable nervous wrecks. What necessarily would be the effect of physical and psychical lesions like these on a child begotten by such parents? The inevitable result would be degeneration in some form or other. Again, many men and women stand the drain of a fashionable season on their nervous systems without attempting to recoup through the agency of drugs, and at the end find themselves physically and psychically exhausted. They go to the seaside or some other resort, and, in a measure, recover their nervous vitality, only to lose it again during the next season. This continues for season after season, the nervous system all the time becoming weaker, until some day there is a collapse ending in hysteria, paresis, or some other of the hundred forms of neurotic disorder. What will be the effect on the progeny resulting from the union of such individuals? Again the answer must necessarily be—degeneration. Artificial light is not the only cause of this nervous irritability. The long and continued intercourse of the sexes in the ball-room, where the women are dressed so *decolleté* that they excite sensuality in the men, very frequently without the men being conscious of the fact, must necessarily exert a deleterious effect on the nervous system. Contact of the sexes in the dance is only pleasurable because of that contact. I am fully aware of the fact that this idea is scouted and denied by those who indulge in the waltz and kindred dances. They claim that no thought of carnality ever enters into their feelings. I know from personal experience that they are honest in this declaration, yet from a psychical standpoint they are wofully in error. Æstheticism and carnality are by no means as dissociate as the æsthete would have us believe. All pleasurable emotions that have their inception in the senses are fundamentally of carnal origin. The waltz is æsthetic, yet all of its pleasure is based on an emotion closely akin to sensuality. Men derive no pleasure from waltzing with one another, nor do women under like circumstances.

Nature demands in the interest of health a certain amount of exercise. The luxurious society man or woman utterly disregards this demand of nature, consequently indigestion, with all of its associated ills steps in, and becomes an additional factor in the production of nervous exhaustion. To tempt the appetite, highly seasoned foods, many of which are deleterious and injurious, are prepared and taken into the torpid and crippled stomach. Finally, nature rebels and the unfortunate dyspeptic is forced to go through life on a diet of oatmeal, or, weakened by lack of healthy sustenance, the brain gives way and the victim passes the remainder of his or her life in a lunatic asylum. Children begotten by miserable invalids like these, beyond a peradventure, must necessarily be degenerate. Indigestion is not the only ill that nature inflicts for any disregards of her laws. She is a rough nurse but a safe one, consequently she forbids the rearing of her hardiest creation, man, in hot houses, as though he were a tender exotic. The luxurious individual pampers his body, following the dictates of his own selfish desires and utterly disregarding the laws of nature, and, before he reaches middle age, discovers that he has become an old, old man, weak in body, but still weaker in mind. The children resulting from the union of the various neurasthenics described above are necessarily degenerate. As they grow up they show this degeneration by engaging in all kinds of licentious debauchery, and unnatural and perverted indulgences of appetite. In nine cases out of ten they will spend the fortunes inherited from their parents in riotous debauchery, and will eventually sink, if death does not overtake them, to the level of their fellow-degenerates—those who have been brought into existence by poverty and debauchery, and who await them at the foot of the social ladder. Among such degenerate beings the doctrines of socialism, of communism, of nihilism, and of anarchy have their origin.

Now, let us turn our attention to the evidences of luxury and debauchery, and the consequent evidences of degeneration which obtrude themselves on all sides. The reckless extravagance of the nobility of the Old World is well known. Vice and licentiousness even penetrate to the royal households, and princes of the blood pose as roués and debauchees. As I have demonstrated elsewhere, degeneration in the wealthy classes of society generally makes itself evident by the appearance of psychosexual disorders. The horrible abominations of the English nobility, as portrayed in the revelations of Mr. Stead, are well known. Charcot, Segalas, Féré, and Bouvier give clear and succinct accounts of the vast amount of sexual perversion existing among the French, while Krafft-Ebing informs us that the German empire is cursed by the presence of thousands of these unfortunates. When we come to examine this phase of degeneration in our own country, we find that it is very prevalent. This is especially noticeable in the larger cities, though we find examples of it scattered broadcast throughout the land. The editor of one of our leading magazines, in a remarkable series of letters, has shown that the wealthy New Yorkers revel in a luxuriousness that is absolutely startling in its license. Thousands are expanded on a single banquet, while the flower bills for a single year of some of these modern Luculli would support a family of five people for three or four years. Bachanalian orgies that dim even those of the depraved, corrupt, and degenerate Nero are of nightly occurrence. Drunkenness, lechery, and gambling are the sports and pastimes of these ultra rich men, and it is even whispered that milady is not much behind milord in the pursuit of forbidden pleasures.

Psycho-sexual disorders are not the only evidences of degeneration in the wealthy, by any means. Many a congenital criminal is born in the purple, who shows his moral imbecility in many ways. Sometimes he sinks at once to the level of a common thief, but generally his education keeps him within the pale of the law. Always, however, his sensuality is unbounded, and he will hesitate at nothing in order to gratify his desires. This unbridled license has already had its effect elsewhere. We see that it has even corrupted the guardians and conservators of the public peace. The recent investigation of the police board of New York shows a degree of corruption that is simply overwhelming, and that the same state of affairs exists in Chicago, New Orleans, St. Louis, and other large cities, I have every reason to believe. There are yet other evidences of degeneration; witness the eroticism that is to be found in our literature. Unless a book appeals to the degenerate tastes of its readers it might just as well never have been published. This is not cynicism; it is plain, unvarnished truth—witness

the success of "His Private Character," of "Is This Your Son, My Lord?" of hundreds of other works of the same character. Again, turn to the stage and we find the same thing. The tragedies and comedies of Shakespeare are shelved, while society plays and "living pictures" hold the boards. Salacity, with only sufficient covering to barely hide downright lewdness, is everywhere apparent. Now, what is the result of all this? There can be but one answer, and that is degeneration. That which happened centuries ago will happen again, for man is governed by the same laws of nature now as he was then.

Statistics show that insanity is markedly on the increase. This is not to be wondered at when we take into consideration the fact that debauchery is the rule, and not the exception, among certain classes of people. Syphilis, one of the most productive causes of degeneration, is exceedingly active throughout the whole civilized world. Blashko states that one out of every nine or ten men in the city of Berlin is tainted with syphilis. This is wholly attributable to the unbounded sensuality of the people. Crime of every description is rearing its hydra-head and clasping in its embrace an alarming proportion of human beings. I have shown elsewhere[1] that the congenital criminal is the result of degeneration, and that he comes from all classes of society. He is, however, most frequently the product of the lower class, and lives and dies among his congeners. I have shown also[2] that the anarchist, the nihilist, and the socialist belong to the same category of degenerate beings. Poverty, brought on by the luxury of the rich, by war, and by high taxation, has, during the last millenary period, been very fertile in the production of degenerates in the Old World. Lack of food and sanitation, the usual adjuncts of poverty, are powerful factors in the production of degenerate individuals. The Old World has gotten rid of these people as rapidly as possible by unloading them on our shores. Year after year, practically without restriction, thousands of these antisocial men and women have swarmed into our country, until we, comparatively speaking a nation just born, contain as many of these undesirable citizens as any of the older nations. They still continue to enter our gates, and we are adding to their number, as I have shown, by our own production. Some day—and I greatly fear that day is not very far distant—some professional anarchist (for there are professional anarchists as well as professional thieves) will consider that the time is ripe for rebellion, and, raising the fraudulent cry of "Labor against Capital," instead of his legitimate cry, which is "Rapine, Murder, Booty!" will lead this army of degenerates, composed of anarchists, socialists, nihilists, sexual perverts, and congenital criminals, against society. And who will bear the brunt of this savage onslaught? The ultra-rich? By no means. The great middle class—the true conservators of society and civilization, will fight this battle. It will be a strife between civilization and degeneration, and civilization will carry the day. There would have been no French Revolution had the middle class been as wise then as it is to day. They were taken by surprise at that savage, bloody time, but as soon as they recovered how quickly they brought order out of chaos! Education is the bulwark of civilization, and the great middle class, freed of dogmatism, bigotry, and superstition, is welcoming education with open arms. It is gaining recruits, and is strengthening its defences, so that when the end comes its enemies may find it fully prepared. When this fight takes place, millions of dollars' worth of property will be burned, and thousands of lives will be sacrificed, but when the smoke of battle clears away civilization will be declared the victor. And the ultra rich, what of them? They will simply open their purses, like they did in ancient Rome, and pay for the privilege of being protected. The sober middle class is a business people, and they will demand and obtain assistance from their wealthy brethren. From the signs of the times and the evidence before me, I have no hesitation in declaring that I believe that the beginning of the end is at hand. This social cataclysm may not occur for many years, yet the agencies through which it will finally be evolved are even now at work, and are bringing the culmination of their labors ever nearer and nearer as time passes.

"WAVELAND."

[1] Vide American Naturalist, The Recidivist.

[2] Vide Century Magazine for October, The Methods of the Rioting Striker an Evidence of Degeneration.

EDUCATION A FACTOR IN THE PROPHYLAXIS OF DISEASES OF WOMEN.[1]

BY FRANCES STORRS, A.B., M.D.,

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FIFTY-ONE years ago Dr. Oliver Wendell Holmes, whose loss we mourn to-day, published a paper upon the contagiousness of puerperal fever, and struck the first blow for prophylaxis in the diseases peculiar to women. The clear argument of that famous classic won its way in the face of bitter opposition and learned opinion—this, too, without the aid either of microbe or microscope. To-day the spirit of that paper is recognized as the spirit of medical progress in the last half-century. Prophylaxis has revolutionized the practice of medicine, and wrought a firm foundation for the splendid superstructures of our systems of State medicine and boards of public health. Parallel with the development of the prophylactic management of disease, even dependent upon that management for success, has been the growth and perfection of modern surgery. Hand in hand they have entered hospital and infirmary, wards for children and lying-in women, and the results have been good to hear.

It is a curious fact that to-day, in the department of gynecology, the so-called diseases of women, prophylaxis has been so nearly lost sight of, while surgery has usurped the field. I need not remind you of the multiplicity of the surgical articles upon gynecological subjects in medical literature during the past ten years, their name is legion, and many are already relegated to the dark ages; but the indices to our recognized authorities upon gynecology are worth considering for a moment, and will illustrate my point. In the "Cyclopædia of American Gynecology," published in 1888, we look in vain for any article relating directly to the etiology of the prevalence of disease among women. Indirectly, several of the authors speak of the causes of certain conditions, but only in brief. Dr. George T. Harrison, in writing upon uterine displacements, in the second volume, makes the pertinent statement: "Prophylaxis is usually left out of the question by systematic writers."

In the "Cyclopædia of Gynecology," brought out by William Wood & Co., in 1887, chiefly the work of German writers, the eight volumes contain no reference to prophylaxis, and only very casual reference is made to etiology.

Pozzi deals only with pathological details and treatment.

Garrigues, in a work of 660 pages, devotes less than six to the discussion of "Etiology in General." Prophylaxis is spoken of here and there, but at no great length.

Thomas, fifteen years ago, and the recent Thomas and Mundé, devote one chapter to the etiology of uterine disease, and throughout these books, especially the later work, appear constant hints as to the prevention of certain conditions. Tait has no chapter on etiology, but he never fails to make his opinions upon the causes of specific conditions clear.

There is little difference of expression in these scant comments upon etiology. Briefly, the causes of these so common pathological conditions in women are of two varieties:

1. Etiological factors for which the woman is chiefly

[1] Read before the Eastern Kansas Medical Society, at Kansas City, Kan., October 9, 1894.

responsible. 2. Etiological factors for which someone else is chiefly responsible.

Under the first head belongs the list which Thomas gives: "Neglect of outdoor exercise; excessive development of the nervous system; improprieties of dress; imprudence during menstruation; imprudence after parturition; prevention of conception and induction of abortion; marriage with existing uterine disease;" and I add from Garrigues, "over-education, particularly in music." These the woman might prevent.

Under the second head: Child-bearing and its consequences, many evil results of which the doctor might prevent; and infection by the gonococcus, which in ordinary cases the husband might prevent.

Here are eighty-five per cent. of the diseases of women. To the remaining fifteen per cent. belong the neoplasms and malformations, which we shall turn over to the surgeon without protest or comment.

Concerning the last-mentioned etiological factor, the gonococcus: If the infection of the utero-tubal tract by the germs of gonorrhœa meant inevitable, sudden death to the woman thus infected, some means would be found potent enough to reduce such fatalities to the minimum. But since it means only a life of such misery that death is a longed-for release, wives and mothers continue to be exposed to that infection; and too often, alas! the protection of the physician is given the offender rather than the innocent offended. And the modern gynecologist, secure in his new found ability to diagnose pus tubes, views with complacency the seed-sowing that is everywhere before his eyes, and smiles a little as he contemplates the harvest of long rows of ticketed jars.

Concerning child-bearing as a cause of uterine disease, too much has been written to warrant even a passing remark from me. Yet something must be radically wrong somewhere, that so many neglected cases of lacerated cervix and perineum, with the accompanying subinvoluted uteri and long train of nervous symptoms, come into the specialist's hands.

It is with the first variety of etiological factors, however, that this paper has principally to deal. There seems to be a tendency in all these works to accept the present condition of woman as an inevitable one, even implying that they prefer to be ill, and choose a life of pernicious dressing and reckless imprudence, especially to exaggerate nervous phenomena and induce uterine affections. What wonder that the art of extirpation has supplanted the science of prevention in treating such irrational beings, and that the very latest and most approved method of dealing with diseased pelvic organs is to preserve them entire in alcohol, as being too complicated a mechanism for the ordinary woman to be entrusted with!

It is far from my purpose to decry the results of surgical gynecology. No one realizes more keenly than I the utter futility of "treating" a tube distended with pus, and that we need no further demonstration of the fact that most pathological processes of long standing in the pelvis are only aggravated by much of the so-called conservative treatment.

But to return to the list of the causes of disease above quoted as being those for which woman herself is largely responsible. One of them is hardly worth a discussion.

Woman's dress bears the brunt of masculine denunciation whenever her ill health is mentioned; yet I venture to assert, as a matter I have been at no small pains to investigate, that nine tenths of the women in the ordinary walks of life dress comfortably, and of the women who have learned to think for themselves, the other tenth is busy inventing some advanced and enlightened costume.

For all the rest of the imprudence, carelessness, and the like in that list enumerated, there is but one excuse, which is no more an excuse in dealing with physiological law than in the violation of the voice of civil authority, but which is too often pleaded as an excuse in both cases; that is ignorance, and an ignorance which is density itself.

Two great necessities, contingent upon mere physical existence, confront every woman; by conformity to their laws she must lose or win, live or die. Nature insists upon self-preservation and preservation of the species. Moreover, she scorns to perpetuate a deteriorating type. How little the ordinary wife and mother, even in these boasted *fin de-siècle* days, knows of the real significance of life, or those mighty forces that know no deviation; and how little she is prepared for the part she must needs play, whether she will or no, in this fierce struggle for mere survival. If it takes three years of constant study and clinical observation to fit a man to wait upon a woman in confinement, and to faithfully discharge the few small duties nature has left undone at that time, how much longer ought it to take to fit that woman for her part in the preceding nine months, and for the responsibility which becomes hers at that time?

Tait alone, of the authors whom I have mentioned, speaks of the ignorance of women in regard to the vital processes of their nature, as largely responsible for the prevalence of uterine disease. He condemns such ignorance as unnecessary and inexcusable, and suggests that it may be removed by the study of the analogous sciences; that the laws of reproduction are the same wherever manifested; and to the observer of plant life who has witnessed the development and understands the structural significance of anther, oviduct, and ovary, the ordinary processes of sexual life present no mysterious difficulty of comprehension. I may be pardoned for differing with so great an authority, but in my school-days, when fitting for college, with a head full of Latin, Greek, and pure mathematics, a very nice little work, written upon the analogous botany idea, was put into my hands as a safe and proper thing for me to read. I don't think it did me any harm, but it left a very confused idea of the semi-physiological, semi-sentimental aspect of the subject so distasteful that I never cared to investigate the subject further.

What all women need as a preparation for their highest function in life, is a thorough training in anatomy and physiology. That training should begin at an early age in preparation for the advent of menstruation, the physiological import of which process should be made as clear as our best authorities can make it. From fourteen to eighteen or twenty, the aim of the young woman's training and education, in school and out, should be toward physical perfection. Systematic exercise in the gymnasium and out of doors should be a daily certainty, and the full process of gestation and parturition, with the development of the embryo, and the growth and needs of the infant, should be unfolded in continuous instruction.

Any interference in the natural order of development in the young girl should be taken in its very incipiency. Interference in nutrition, which is often succeeded by pathological conditions only amenable to the surgeon's knife, may be easily handled in their early stages. When women turn their attention to acquiring physical fitness for motherhood, there will be less demand for the professional laparotomists.

In all seriousness, this is no Arcadian dream. There is not a mother alive but would spare her daughter the suffering she has undergone in acquiring the "Wisdom of Experience." The difficulty is, she does not know how, but she does feel her ignorance. Over and over again they say to me, "If I had only known."

More than that, there is a growing dissatisfaction with the results of our present system of higher education for woman. The women who go out from our colleges to fulfil the law of their destiny by becoming the mothers of families, feel that some very essential subjects are left out of our college curricula, and they would be glad enough to exchange a few books of Homer, or even the enjoyment of Dante in the original, for some sound facts about life and health.

Garrigue says that our girls are over educated, and especially in music. Not over-educated, but educated in books too soon. Physical education must come first, and

there will be plenty of time afterward for culture and art.

It doubtless has occurred to some of you that this paper would better have been read before some enthusiastic body of organized women, who might forthwith form themselves into a club for the collection of bones and the exchanging of specimens.

Not at all. Clubs are well enough in their place, but this is a question involving the great modern principle of prophylaxis in medicine.

If the diseases of women are many of them preventable, then should the medical profession have a care that they are prevented. If women are reasonable beings—and who would deny that they are—then they can be taught, and it is the medical profession who must decide what they are to be taught.

Dr. Holmes has given a priceless example to the profession of America, and he lived to see the second and third generations rise up and call him blessed. No greater tribute can be paid his life and works than by the perpetuation of the spirit in which his work was done, the enthusiasm for the science of prophylaxis wherever disease is found.

EMERGENCY CASES OF SKIN DISEASES.

By FRED. J. LEVISEUR, M.D.,

DERMATOLOGIST TO RANDALL'S ISLAND HOSPITALS.

When the surgeon is called in cases of emergency, he certainly will be pleased to find a wound already cleanly covered with a temporary dressing, or a fractured limb in an improvised splint. Wrong or delayed action in these cases is frequently followed by very serious consequences. The first help in some skin diseases is not of such great importance, it is true, but it is a fact that mistakes are made continually which it takes a good deal of time or trouble to correct afterward. In his paper, read at Rome, and entitled "Non Nocere,"[1] Dr. A. Jacobi has collected a treasure of advices and warnings. It is to be regretted that time and space limited his remarks to certain affections occurring in infancy. Harm is done quite frequently in the treatment of skin diseases, and especially in emergency cases, *i. e.*, cases in which the presence of alarming symptoms or the apprehension of the development of such, prompts the patient to seek immediate medical help.

Make a Correct Diagnosis.—A correct diagnosis forming the basis for our therapeutical action is essential in the first place. Acute eczema, for instance, is sometimes mistaken for erysipelas, even by the better-versed physician. I am referring to that special form of eczema which makes its appearance in the face near the ears, nose, or eyes, and consists of a patch with round, distinct border line. Its color is brownish red. Its surface is covered entirely or in part by a thin layer of brown crust. In the very beginning close inspection will reveal the presence of millet-sized vesicles. In the majority of cases, however, the appearance will already have been changed by the application of some irritating lotion or salve, applied under the impression that the affection is erysipelas. The itching is now aggravated until it becomes almost unbearable. The patient's general condition suffers considerably from sleepless nights or from the weakening effects of morphine or chloral; and if—as happens not infrequently—the patient becomes somewhat feverish, the phantom of erysipelas is complete. One should carefully bear in mind the characteristic symptoms of erysipelas. Typical cases begin with a chill and vomiting, followed, after twelve to twenty four hours, by an eruption, which at first consists of a spot of about the size of a silver dollar, irregular in outline and painful on pressure. Its border is somewhat raised, and it progresses rapidly, not unlike a miniature wave. At a later stage the entire face may become swollen, the eyes closed, the ears thickened, and possibly the affected area studded here and there with bullæ or crusts. The fever is usually high, and the patient makes at once the impression of being seriously sick. To return to eczema, there is generally a history of nasal catarrh, a chronic affection of the middle ear, or a conjunctivitis. We are justified, I believe, in assuming that the pathological cause of this particular form of eczema is a micro-organism, not yet known, but differing essentially from Fehleisen's coccus of erysipelas and Rosenbach's of erysipeloid. E. Fridenberg[1] and a few others before him report that they have observed this eczema to occur after the instillation of mydriatics. I have no objection to the name dermatitis periocularis medicamentosa, but I believe it better not to call it pseudo erysipelas. Elliot[2] defines erysipeloid as an inflammation of the skin which develops in a wound as the result of its infection with certain special micro-organisms found in dead or decomposed animal matter. It manifests itself primarily in the form of a sharply defined, slightly elevated, dark, violaceous, almost livid red zone, which appears around the point at which the infection has taken place. The area of redness extends peripherally, and at the same time involution and fading of the portion first attacked takes place. During the entire course of the process itching and burning exist, being oftentimes exceedingly annoying. There is no desquamation or scaling of the epidermis at any stage, and no systemic disturbance.

Again, erysipeloid should not be confounded with pseudo-erysipelas. This latter affection is usually ushered in—according to Kaposi[3]—by a chill and fever, and consists of a tense, painful swelling, of vivid red color. It is found, as a rule, to affect the extremities. After two or three days the tissues break down and suppuration sets in, often followed by an enormous destruction of the subcutaneous tissue, fasciæ, muscles, bones, and joints.

The eruptions caused by the internal use of drugs often simulate other diseases. Caspary[4] remarks correctly, that the physician who is called upon to treat an acute eruption, the diagnosis of which is not beyond doubt, should think of the possibility of having to deal with a drug eruption, and try to find out by inquiring of the patient or those around him. Morrow[5] says that the scarlatiniform rash of belladonna, quinine, chloral, morphia, etc., may be distinguished from scarlatina by its sudden onset, without prodromic symptoms, and the absence of fever and high temperature. The rubeolaform eruption of antipyrine, copaiba, etc., may be differentiated from measles by the same negative evidence. The pustular eruption of bromine and iodine may closely simulate small pox. There are some popular patent medicines in the market which contain some iodine and are liable to produce lesions, the umbilicated character of which may suggest small-pox.

The difficulty to discriminate between varicella, varioloid, and variola,[6] is a subject which has been discussed so often that I hardly need enlarge upon it. Varicella, as is well known, is a disease occurring mostly in children from six months to ten years old. It has very slight prodromic symptoms, and consists of the appearance of successive separate crops of superficially seated vesicles. Severe constitutional symptoms are absent.

The hemorrhagic affections of the skin may furnish emergency cases which are difficult of diagnosis. Purpura hæmorrhagica may be confused with scurvy, or the hemorrhages of hæmophilia, leucocythæmia, and pernicious anæmia. Fortunately, the treatment of these hemorrhagic affections is so similar that, by mistaking one for the other at first, no serious consequences will follow.

If I were not prevented by the limitation of space from

[1] Medical Record, May 19, 1894.

[1] N. Y. Medicin. Monatsschrift, November, 1894.

[2] G. T. Elliot, in Morrow's System of Genito-urinary Diseases, etc., p. 130.

[3] Pathologie u. Therapie der Hautkrankheiten, 1893.

[4] Archiv f. Derm. u. Syph., I., 1894.

[5] System of Genito-urinary Diseases, etc., p. 353.

[6] Variola and Vaccinia. Published by the New England Vaccine Company.

going into details, I could extend the list of possible mistakes much further by mentioning rarer cases; for instance, erythema scarlatiniforme,[1] precocious malignant syphilis, pemphigus vulgaris and foliaceus, dermatitis exfoliativa neonatorum, pityriasis rubra, scleroderma, etc. It may suffice to quote in this connection Dr H. R. Crocker's advice, which is, to make the diagnosis in a given case by settling the following questions in the order named: "How long has the patient had the disease? What was its cause? What symptoms, especially as regards itching, fever, etc., attend or preceded the eruption? What is its cause?"

Ohmann Dumesnil[2] says that diagnostic skill of the highest character will frequently prove of little or no avail in cases of eruptions due to the artifices of malingerers. The ingenuity and tact of the physician are called into requisition, and it is more the motive of the patient than the actual condition which will lead to any suspicion.

Look Out for Possible Complications.—It is not sufficient to merely make a correct diagnosis, but it is also necessary to be on the lookout for complications. The case of a patient in one of the city hospitals is still fresh in the minds of many. A man who suffered from alcoholism and at the same time had a tuberculo pustular syphilide, contracted small-pox. The symptoms of the latter disease were so much obscured by the other two affections that the failure to make a correct diagnosis was perfectly pardonable. The patient died, and the true nature of the disease which caused his death was revealed upon the dissecting table.

The following complication came under my personal observation: M. H——, a boy, nine months old, had an infantile eczema on both cheeks for which the family physician prescribed tinctura rusci to be painted on the affected parts every day. At first there was some improvement, but suddenly a very acute pustular dermatitis spread over the face. On opening the lids of the left eye, which was closed by considerable swelling, I found a small pustule in the centre of the cornea. Dr. Gruening, who was consulted at once, predicted (and such was the result), that a central opacity of the cornea causing strabismus would remain.

I also had occasion to observe a peculiar complication in a severe attack of urticaria:

O. S——, a boy nine years of age, who was subject to outbreaks of urticaria after eating fish, one evening, at a children's party, partook of the forbidden food and immediately developed alarming symptoms. He was taken home almost unconscious, unable to breathe, his lips and tongue were bluish red and swollen, and the body covered with large wheals. I was informed that he was suffering at the time from adenoid vegetations in the vault of the pharynx, for which he was under treatment. Six years later, after taking a teaspoonful of white vaseline, which was recommended to him as an effective laxative, by a friend, he had again an attack of urticaria with extremely severe dyspnœa, etc. Examination showed that the adenoid vegetations had returned in spite of repeated operations which had been performed in the meantime. The treatment in both attacks consisted of putting the patient into a bath tub and sponging him with cold water until breathing was somewhat easier. On account of the pharyngeal swelling it was not deemed safe to give him an emetic, and a tablespoonful of castor oil was administered.

Dr. Mendel has reported a case which in some respects closely resembles the above. An exanthema caused by copaiva was complicated by the presence of adenoid vegetations. There was a great deal of swelling, pain in the pharynx, and severe dyspnœa.[3]

Be Careful in the Use of Antipruritic Remedies.—It is a fact well known but deserving to be emphasized again, that our best antipruritic remedies, tar and its chief derivative, carbolic acid, do more harm than good in cases of general pruritus. They may afford some temporary relief, but the skin is liable to get irritated, furunculi may form everywhere, and the patient is apt to fall from the Scylla of itching into the Charybdis of general dermatitis or furunculosis. Besides, a peculiar intolerance of the integument against all local treatment is frequently established. If a new attack occurs it may be so severe as to drive the patient almost crazy and to the verge of committing suicide. In such cases a hypodermic injection of morphine, chloral internally, or even chloroform anæsthesia, must be resorted to. A cold douche or bath containing sulphur, carbonate of soda, alum, or sublimate may be given a trial. There is no doubt that mental depression is one of the most important factors in the etiology of this distressing affection. The physician called in such an emergency case should therefore carry out his treatment with energy and tact.

The old error of treating the most prominent symptoms instead of the disease is frequently committed in prescribing antipruritic remedies for acute general eczema, drug eruptions, or similar acute inflammatory conditions of the skin. The following case may serve as an illustration of the truth of this statement:

Mrs. A. P——, forty six years of age, had had for years a slight chronic eczema on the fingers of both hands. During a sickness of a member of her family she happened to come in frequent contact with preparations of carbolic acid, and thus developed an acute eczema on the hands, forearms, and face. In order to relieve the intense itching, her family physician gave her a wash containing some carbolic acid. Soon after the first application a most acute eczema spread over the entire body, and when I was called to see the patient, I found her in a deplorable condition. She had to be swathed in bandages saturated with zinc-calamine solution for several hours, after which her body was covered with Lassar's paste spread on strips of linen. Wherever possible these strips were bound down with bandages. This treatment not only relieved her itching but was also the first step to a final cure.

The Use of Antiseptic Remedies.—Antisepsis in the treatment of skin diseases differs in a great many respects from surgical antisepsis. A healing by first intention, of most lesions, is not to be expected; certainly not if the corium has been destroyed; but even if it is only impaired, denuded of the epidermis, or if bullæ have been formed, the process of reparation can solely be accomplished by catarrhal (epithelial) suppuration, the product of which is the "dry scab" under which healing takes place easily and undisturbed. This is nature's own antiseptic routine, which we should try to imitate as far as possible by using remedies which, although inert as it were, are capable of absorbing moisture and forming a coating that furnishes protection against air and against infection from the outside. In this sense these remedies are better antiseptics than those which have earned their reputation in the realm of surgery as being destroyers or antagonists of micro-organisms.

In emergency cases of dermatitis ambustionis of the second degree, *i.e.*, burns and scalds, the old-fashioned carron oil or corn starch, with the addition of boric acid, oxide of zinc, salicylic acid, bismuth, dermatol, etc., is far more effective and reliable than iodoform. Or, if lotions or the continuous bath are used, solutions of boric acid or liquor aluminii acetici (ten per cent.) are preferable to solutions of carbolic acid, sublimate, etc. In herpes zoster simple cornstarch, dusted on freely and bound down carefully by the aid of a thick layer of absorbent cotton, is by far the best treatment. In two cases of this disease I have seen the lesions break down and an extensive dermatitis develop under a dressing of iodoform gauze. In a case of intertrigo between the legs of a female infant, a dressing with carbolic acid gave rise to deep ulceration. In short, it has been my experience in such emergency cases that I was more often

[1] C. W. Allen: Concerning some Unusual Eruptions, MEDICAL RECORD, August, 1893.

[2] Some Points in the Diagnosis of Diseases of the Skin, Cincinnati Medical News, i., 1891.

[3] Bulletin Medical, 24, 1894.

concerned in the removal of antiseptics previously applied and their bad effects, than in advising their use.

I present this epitome in the hope of creating an increased interest in this class of cases of skin diseases which are apt to confront the practitioner at any moment and should not find him unprepared, but able to meet all requirements.

"Hoffman Arms," 640 Madison Avenue.

THE CARD INDEX OR CARD CATALOGUE AS ADAPTED TO HISTORY-TAKING IN PRIVATE PRACTICE.

By ROBERT L. DICKINSON, M.D.,

Lecturer on obstetrics, and assistant obstetrician, long island college hospital; obstetrician to kings county hospital.

Synopsis.—This method of keeping records consists in using one or more cards (measuring about 6 × 6⅔ inches) for each case, the cards being ranged under an alphabet index and stacked on edge in a drawer or box, and folded down the middle for carrying in the pocket.

Such a system (the card size being immaterial) is the only portable, elastic, simple, orderly and self indexing way of keeping records and is as readily used at the bedside or operating table as in the office.

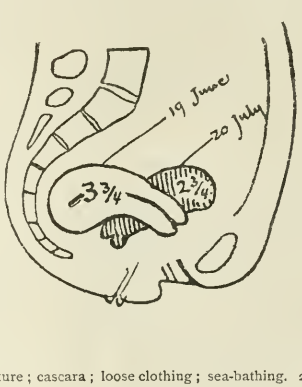
Disadvantages of Books.—Books are inelastic. If the case runs to the foot of one page, where shall it be continued? One can rarely guess at the space required in beginning a history. The next page is occupied; one must skip to the first blank page, or borrow part of a page near by, with the result that a long record will be in scraps through one or more case-books and scattered so that the parts of the history cannot be assembled. A separate index, in a separate book, is required after a while, in order to avoid searching the index of each book. Books are not portable. Notes taken at the house or hospital must be copied or pasted in. Books grow worn and shabby from much handling, if large, and if thin many are required. After all the other cases are closed up, one may have still to use an old book for a single case. He cannot keep its history with his recent cases.

Disadvantages of Sheets.—Sheets of stiff paper may be kept in alphabetical order in a letter file or binder, but they inevitably become frowsy at the corners, they do not stack on edge, they are not readily run through the fingers like the leaves of a book when a bunch of them under a certain letter is picked up, as cards are, and they are generally too large for carrying in the pocket. The method is only suited to hospital conditions. Dr. Richmond Lennox and I have used both sheets and cards and find we save much time and discomfort with the cards.

Advantages of Cards.—*Portability.*—For office use cards will be found to be handier than a book, and the specialist, above all men, will find them convenient. For bedside notes this is the only handy method. For immediate record of consultation work and for operative

Smith, Mrs. John, 32. Father tuberc. Pneumon. 6 years ago. Slender, overworking, worrier. *Headaches* every 2-3 dys; good eyes; good dig., but costive. Piles, rarely bleeding; chest, right; clothes tight; corset springs 3 inches; urine: 60 oz., 1023; no alb. or casts.

G. Mar. 6 yrs; 2 children; oldest, 4; ygst, 1; 0 Misc.
Labors severe, forceps. Puerperiums fever.
Menses, formerly not *painful, irregular.*
Now pain, none slight, *Severe cramps front R. L. iliac reg.*
Backache, before, *during,* after, *between,* constant.
In bed 1½ *dys.* Much dragging.
Flow free, scanty. *Clots,* membrane.
Irregular every 20-30 *days,* weeks, *lasting* 6 *dys. Last men.* 7 Je.
Vag. discharge constant, profuse, slight mucus, *purul,* foul.
Urination frequent, not painful. *Dyschezia, dyspar.*
Walking, working, not *painful.* *Dates trouble from* last labor.



Retroversion.
Subinvolution.
Induration right brd. lig.
Ext. *hæmorrhoids.*
Uterus mobile.
Ovaries moderately displaced, not tender.

Partial reposition ich. tamp. iac to cervix. Basham's mixture; cascara; loose clothing; sea-bathing. 23 Je, same. 29 Je, backache and leuc, less do. 5 July, s. r., Smith pessary. 10, easier period; impr. position; ℞ Aloin Strych., bellad. 20, hard r. pess.; much better; 2⅝ cavity, and so forth.

Fig. 1.—Card for taking case histories. Actual size. The rubber stamp that is used to print part of the history, if desired, and the stamp of an outline for graphic notes, are also shown.

and obstetric cases, it is exactly adapted, while for medico-legal cases notes made on the spot are the only ones the medical man may consult in the witness chair. In reporting a single case or a group of cases at a society meeting, or in getting together case histories in writing a paper, the cards required are picked out and sorted as desired. One carries in the pocket the cards of patients ill at home, selecting those needed as one leaves the office, and dropping the convalescents.

Elasticity.—Whether there be twenty cases, or two thousand or twenty thousand, the whole history of each patient is assembled and whatever the number of histories they are always in order, yet there is always room for more.

Self-indexing.—The cards are ranged under an alphabet printed on buff bristol cards (guides) that stand taller than the history cards. This index can be in twenty-six letters or carried to two, three, or four letters, as in the Burr index, *i.e.*, Bradley might come under B in the simple way, Br for the two-letter method, Bra for the three-letter index. Beyond two thousand, however,

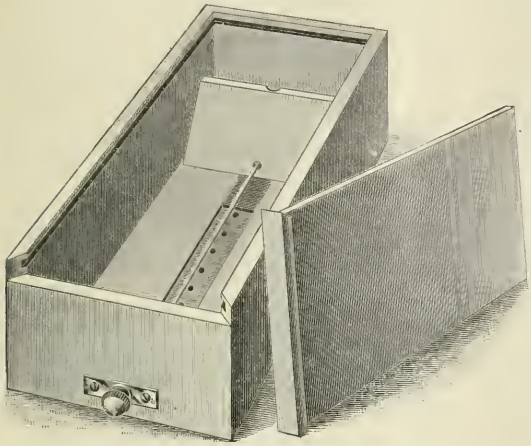


FIG. 2.—Box to hold the cards, where a drawer is not available. The guard rod here shown at the bottom of the box is used in library work to prevent removal of the cards, but is unnecessary in private practice. One of the blocks that slant the cards at the proper angle is seen, with the holes that steady the catch of the rear block to adjust it for any number of cards.

we use the "directory" method by entering every twenty-fifth name on a guide, as I have done in the identification-and-rating-card-index to the thousands of men examined for the civil service commission. Practically, however, after a while we keep a small working list under an alphabet in the front of the drawer, and under a separate alphabet behind stand the histories which we are not liable to need again.

Details.—The cards I am using are 6 × 6⅜ inches, thin, blue-ruled, with red line for headline, standing on edge in a drawer where I look down on them at my side. When Mrs. Bradley arrives I pick up the bunch of B's and run them through as quickly as one does the index of a book. For long cases cards can be fastened together very solidly and conveniently by a Middleton Clip at the upper right-hand corner. It is small and thin and does not have to be punched through the paper. Sketches or loose notes are readily pasted on the cards or can be kept in envelopes of the exact size of the cards provided for this purpose, at a small additional cost. Instead of a drawer—and in any deep drawer a partition can be fastened—a box with lid and lock can be had, but a drawer is most convenient.

For the beginner it is especially important to start with a system that cannot be outgrown, that is elastic, and that will train him to orderly methods.

Reasons for this Size, Ruling, Grade of Paper, etc.—The card is the largest that will go into the pocket-book or wallet of average size, with one fold. This fold must be upright, so that cards will stack and turn easily when replaced in the drawer. Paper stock cuts economically to this size. The material is the thinnest that will stand on edge without sagging. The ruling is a standard adopted by librarians as suiting the average handwriting; and all these things, and other important details, are based on the long study and elaborate experience of the Library Bureau, makers of standard supplies for our great Libraries. Satisfaction will be wanting from the hands of an ordinary printer; a perfect edge, absolute exactness of size, and an even distance of ruled top-line from the top, so that the names appear in exactly the same spot, are all essential to speed and comfort in running over a bunch of cards. The Library Bureau (of 146 Franklin Street, Boston, and Stewart Building, Broadway, New York) do very handsome and satisfactory work at reasonable rates.

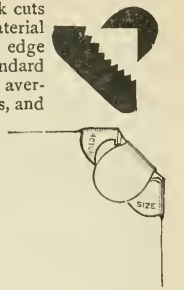


FIG. 3.—Clip to hold cards when one or more is used on the same case, shown from the rear before and after fastening. It works best on the right upper corner. Middleton paper fastener.

The proportions and details of this arrangement have been the outcome of much study, and all the fittings are kept in stock. Variations in size of card will cost more in money and delay, but variations in details, such as a printed form, any ruling or none, or any kind of card as to thickness, color, or variety of tints of edge for different kinds of cases, are easily adapted. For some specialists, as ophthalmologists, whose notes are brief and who write small, the standard postal size, nearly 3 x 5 inches, works very well and is much cheaper One who writes large may desire a wider ruling than three sixteenths of an inch, but it is to be clearly understood that my plan will not suit men who take copious notes in a large handwriting.

Practically it is found that two-hundred to three hundred cards make a working list for a busy man. The consultation cases, and the patients gone or moved away, can go under a separate alphabet in the back of the drawer when the lists grow bulky. Another alphabet may serve to index diseases, or interesting cases, or the subjects on which one is gathering data, but at first all cards may stand under the single alphabet, if desired.

In libraries the cards are made fast in place by a guard-rod running through a hole in the bottom of each card. A turn of the drawer knob unlocks the rod, and as it is slipped out the card is freed. This can be applied to our cards, but it is unnecessary.

The full outfit consists of,

1,000 cards, weight No. 7506, ruled with double red line at top, 29 blue lines $\frac{3}{16}$ inch apart, not punched, costing.	$4.00
1 alphabet index (A–Z guides) buff bristol board, costing...	.95
2 blocks, the rear sliding in slot with catch, so as to set the case for any number of cards, in a drawer 6¾ by 14¼ inches, or longer, oak, mahogany or walnut, with handle and label holder.....	4.50
Or box, oak, mahogany or walnut, with lock.....	3.50
The whole outfit costing, with box.....	8.00
with drawer.....	9.00

One may start with fewer cards, but it is best to get two A–Z indexes. The Middleton paper fasteners can be ordered also, or procured at a stationer's. In ordering, specify carefully: Box with or without lock; or drawer; kind of wood desired; two blocks, one with catch; label-holder; number of cards, ruled or plain, unpunched; and number of alphabet guides.

NOTE.—I have found that this method is in use in the Johns Hopkins Dispensary, but many details have been bettered in these plans, as experience shows. Many business houses employ the large cards extensively.

145 CLINTON STREET, BROOKLYN, N. Y.

PUERPERAL FEVER.[1]

By THERESA BANNAN, M.D.,

SYRACUSE, N. Y.

PUERPERAL fever is defined as a septicæmia developed from the absorption of foul material through wounds due to parturition, the most common source of such material being the uncleanliness of the attendants. Hence in these days of asepsis and antisepsis the physician who reports a case of puerperal fever almost challenges the charge of gross negligence.

It will be unnecessary for me to touch on the literature of this subject, since it is the foundation of modern obstetrics. In a city the size of this, where there is no large maternity hospital, the infectious character of lying-in fever is rarely brought to the notice of the profession. The following cases occurred in the Maternity Department of one of our hospitals, being the first cases of the kind in the history of the institution.

An outline of the care given during the puerperium will not be out of place. The patient is prepared for labor by a bath, a bichloride vaginal douche, and an enema. Care is taken that the bladder is emptied. A short night-dress is supplemented by a folded sheet tied around the hips. Cotton stockings reaching half-way up the thigh complete the toilet. Everything about the patient and her bed is clean. The nurses wear their regular uniform, and the physician is dressed in a cotton gown. The diagnosis of the presentation is first attempted by external palpation, the internal examination being made when labor is undoubtedly present. The hands are prepared for this examination by being thoroughly scrubbed with soap and water—and then bathed in a 1 to 3,000 bichloride solution. The examining finger is protected from any contact until it enters the vagina. Unnecessary examinations are avoided, although the perineum is generally stretched to diminish the chances of laceration. As soon as the head has cleared the vulva one hand grasps the fundus of the uterus while the other assists the delivery of the body. The placenta is expressed within five or ten minutes, ergot given in routine, and a vaginal douche. A sterilized pad and abdominal binder are applied, and the woman is removed to the ward. Vaginal douches are given twice a day for one week, not because it is considered necessary, but because it seems best in a hospital. Such is the routine of the Maternity Department, and such was the care of the two following cases:

CASE I.—L. E——, aged eighteen, unmarried, primipara, had been in the hospital two or three months. She had always been in good health and continued so during pregnancy. Urine normal. Labor began about midnight of July 9, 1894, and she was delivered about 7 A.M. Vertex presentation, first position. Perineum was stretched, and laceration of first degree occurred and was not repaired. Placenta and membranes expelled entire. Everything normal until the morning of the second day, when, at 7.30 A.M., the temperature was found 100.8° F. Four hours later the patient had a severe chill, accompanied by pains in the abdomen, and a temperature of 103.2° F.; pulse, 100; respiration, 30. Ergot was given, and two drachms of sulphate of magnesium and quinine, grains two, *t.i.d.*, was begun. Free perspiration followed the chill and the bowels moved freely, but at 10 P.M. temperature had reached 104.8° F.; pulse, 147; respiration, 56. Phenacetine, five grains, and another dose of salts were given, hoping to produce a fall of temperature by natural channels of radiation. But the next morning, at 7.30, temperature was 104.4° F.; pulse, 120; respiration, 40. At 10 A.M. the uterus was irrigated with sterilized water. This was done not because it was indicated, the lochia being normal, the uterus hard and not sensitive, but because I wished to protect myself from censure, knowing well that the majority of physicians would condemn such an omission. No shreds or clots were washed out, and no odor was perceptible in the return flow. The double tube was used. Two hours after irrigation the patient had a severe chill, and the temperature went up to 105° F. Once again the uterus was irrigated, this time with the single glass tube and a 1 to 8,000 bichloride solution. Nothing was washed out except a little fresh blood produced by the tube. Completely satisfied that if the source of infection was within the uterus, irrigation was not the indicated treatment, no other irrigation was made. The abdominal uneasiness disappeared, however, after the second irrigation, whether because of it or of the antipyrine, five grains, which was given twice, while the two grains of quinine were increased to five. Salines were also continued.

About this time the search for the focus of infection disclosed three abrasions on the inner sides of the labia minora. These were covered with a grayish exudate, forming the so-called diphtheritic patches. Vaginal douches of bichloride were ordered three times a day, and the parts to be separated by iodoform gauze. Under the two doses of antipyrine the temperature fell to 100.6° F.; pulse, 70, and remained so during the night.

To make an impression on the fever calomel and bicarbonate of soda, ten grains each, with fifteen grains of quinine, were administered at one dose, but three hours later, 11.30 A.M., she had another severe chill and temperature, 102.4° F.; pulse, 90. This being the third chill, and occurring at the same time each day, a malarial element seemed, in the absence of other factors, to be a cause of the high temperature. Quinine was given in large doses until cinchonism was produced. There was no splenic tenderness nor mammary disturbance. Feeling that the lacerated perineum might have some causal influence, although it had not been covered with the grayish patch, it was now, on the fifth day, gently scraped and repaired. Peroxide of hydrogen was now applied to the gray patches every three hours, and was continued until they disappeared. At 9 P.M. the temperature reached the highest point of the day, 103° F. During the night it remained at 102° F., and at noon of the following day, when a chill was expected, there was only a sensation of chilliness with temperature 101.4° F. This seemed favorable; but three hours later the thermometer recorded 104° F. Antipyrine was employed to reduce the temperature, and small doses of calomel and the salines were given to keep the bowels loose.

Next day at 9 A.M. temperature was 100.4° F., and at noon 105° F.; pulse, 100, without a chill. In spite of antipyrine it continued 104° F.; pulse, 110, all the afternoon until 9 P.M. Quinine in full doses and phenacetine were used, but temperature was 103° F. all night, and during the following morning continued to rise. With a feeling akin to desperation all medication was ordered stopped except salol and phenacetine, two and one-half grains each, which were given every two hours, alternating with phenacetine, five grains. Regular diet was given instead of liquid. Such a step was decided upon because of the inefficiency of the treatment, which, whether local or systemic, appeared to produce no effect on the course of the disease. Moreover, the patient was very comfortable, even during the highest fever. Only during the chill did she complain of discomfort, and so incredible did the presence of so much fever seem that she was watched while the temperature was being taken to exclude trickery.

Under the salol and phenacetine, begun on the eighth day after labor, temperature continued to fall until it was 99° F., and remained down for one day. On the next day, the tenth, at 9 A.M., temperature was 103° F.; pulse, 98, and at noon 103.4° F.; pulse, 116. Fowler's solution was now begun, for its tonic and anti-malarial effect, quinine having been abandoned. The temperature remained at 102.4° F. all the afternoon, and in spite of the antipyretics, reached 103° F. in the early morning. It varied from 101° to 102° F. for the next two days and the antipyretics were stopped. Without again reaching 100° F. it returned to normal, and the patient went on to recovery, much the worse physically for her experience.

[1] Read before the Syracuse Academy of Medicine, October 23, 1894.

Five days after the delivery of Case I., another woman was delivered in the same room, under identical conditions, and placed in the same ward with her. Though her labor had been long and tedious, necessitating manual dilatation of the os and constant attention to free the anterior lip from the occiput, she passed a perfectly normal puerperium.

Case II.—A. H.——, forty years of age, primipara, unmarried, was delivered under the same conditions as Case I. on August 30, 1894. She had slight pains all day, and at 7 P. M. they became vigorous, and she was delivered about 11.30 P.M., being a short labor for one of her age. Everything was normal until the head cleared the vulva, when the cord was found so tightly around the neck that the least traction imperilled its continuity. The head had become so elongated from pressure that the cord could not be slipped over it, so was tied and cut and the child extracted. There was no laceration of the perineum.

Next day the temperature was 99.4° F.; but thirty six hours after delivery reached 102.8° F., rising to 103.2° F. in the evening. At 3 P.M. of the following day temperature was 104.6° F.; pulse, 120. Ten grains of quinine and salines were given, and the next morning temperature was 101.4° F., and in the afternoon 103.2° F. The following day, the fifth day after delivery, temperature was 103.6° in morning, and 105.2° F., with pulse 128, in the afternoon. During this day the abdomen had become very much distended with gas in the intestines. Pressure discovered not the least pain in any part, and except for the difficulty of respiration, due to the distention, the patient felt very comfortable. In the evening Dr. Allen saw the case with me, and discovered a slight bogginess in the left broad ligament. Diphtheritic patches were sought, but not found until the following morning.

The treatment decided upon was to give an intra-uterine douche and note the effect, and to support the patient's strength by strychnia, whiskey, and peptonized food. The lochial discharge was normal. Next morning a uterine irrigation of 1 to 3,000 bichloride was made, which washed out two or three small inoffensive clots. The abdominal distention had, in the meantime, increased and was treated by turpentine enemata and stupes, and also by turpentine per mouth. The rectal tube was inserted also, and the tincture of nux vomica substituted for strychnia, nevertheless the temperature remained stationary at 104.2° F.; pulse, 120; respiration, 28 to 44. On the following day improvement by the lessened distention was noted; the pulse did not rise above 120, but the temperature was 103.4° F. in the morning, 104.8° in the evening. The diphtheritic patches had been treated as in Case I., but nothing seemed to control the fever, and as the temperature was 104° F. the following morning, the phenacetine and salol were given twice and temperature fell to 101°, ascending to 103.6° F. at 9 P.M. One ounce of sulphate of magnesium was then given, smaller doses having little effect. The temperature remained at 104.4° F. all the following morning, yielding somewhat to the antipyretics in the afternoon. The salts having little effect one ounce of castor-oil was given, and the salol and phenacetine administered every two hours. Still the temperature fluctuated between 103° to 104.8° F., with pulse 120. The oil was repeated, and next morning, the eleventh after delivery, temperature 99.2° F. at 9 A.M. and 104.2° F. at noon. This was the last rise, and patient went on to recovery. At the first rise of temperature the patient had been removed to the medical ward.

The Maternity Ward was thoroughly fumigated and the labor-room furniture washed with bichloride. Within a week two women were confined, one of whom entered in labor. She developed two diphtheritic patches, but had not the slightest disturbance of temperature or pulse. The only change in care was the omission of douches after labor.

The above cases are similar in having, as far as could be discovered, the same cause—diphtheric patches on the abrasions due to parturition. The fever was unusually high in both cases, while the discomfort produced was slight. They differ in that one case severe chills occurred, while the pulse rarely corresponded with the temperature; in the other case great abdominal distention and much cardiac disturbance were present. Both women had emotional paroxysms, which, no doubt, somewhat disturbed the nervous poise. The treatment, though far from satisfactory, was in accordance with my best judgment. To repeatedly irrigate the parturient canal when not clearly indicated seemed meddlesome. Antipyretics were not used early lest they should obscure the condition without affecting the cause. When all other treatment failed to reduce the temperature, and the evils of its constant elevation were feared, antipyretics then used confessed failure along more scientific lines of treatment. The preservative power of Mother Nature was not forgotten. Both patients received excellent care, day and night, from the nurses in charge, and, whatever the cause of their illness, it would seem far removed from neglect.

503 Warren Street.

CASES OF MONSTROSITIES, WITH SPECIAL REFERENCE TO THE THEORY OF MATERNAL IMPRESSIONS.[1]

By JOHN H. BARRY, M.S., M.D.,

Long Island City, N. Y.

Medical genius and scientific investigation have done much to make the physician of to-day feel envious of the proud advantage he holds over the minds of long ago.

But the self-same scepticism, the same disinclination to attempt a translation of the wonderful and the monstrous, actuates us as actuated our forefathers, and we pause spell-bound at the diverse manifestations of the workings of an Infinite Being, just as they acknowledged their inability to cope with the miraculous and mysterious.

Thus it is that the etiology of monstrosities is as vague as ever, and medical pride bows in abject submission when confronted with the task of averting the misfortune, or even comforting the pangs of sorrow and distress incident upon a monstrous conception. It is with no likelihood, then, of diverting from the well-beaten path, but rather to furnish my quota of evidence, that the record of the appended cases has been undertaken for your interest and possible instruction.

Case I. *Anencephalus.*—Mrs. A——, twenty-four years of age, primipara, was delivered on October 18, 1893, of an anencephalic infant, presumably full term, and bearing the following gross characteristics: No frontal bone developed above supra orbital ridges, latter marking summit of skull; collapsed membraneous covering over frontal area of calvaria; three segments of dense tissue, resembling placental tissue, arising from a common stem in the region of foramen magnum, each segment being about the size of an almond. Bulging eyes, frog-faced countenance; ovoid contour to chest and trunk plainly observable while babe lies prone. Six fingers on either hand; six toes on either foot. Tendency to apposition of plantar surfaces of feet when brought in contiguity. Spinal column intact; no spina bifida: notable tumefaction of abdomen. Lived about three minutes. No autopsy allowed.

Case II. *Hernia Cerebri* (*Occipital Meningocele; Breech Presentation*).—On August 29, 1894, same mother as in Case I., delivered spontaneously what was presumably an eight months'-foetus, bearing the following characteristics: Frontal bone present; marked cleft antero-posteriorly extending from nasal process of frontal bone to anterior fontanelle. Superior angles of either half of frontal bone marked by delayed osseous development, the same condition obtaining in anterior and

[1] Read before Queens County Medical Society, October 30, 1894.

posterior superior angles of parietals and anterior superior angles of occipital bone, so that each semilunar segment going to form anterior and posterior fontanelles contrived to form unduly large ones, into which the tip of finger could be readily inserted. Skull development, notwithstanding, more perfect than in Case I. Countenance nearer normal, more or less ovoid contour to chest and trunk. Spinal column seemingly intact; marked luxation of hip-joint in flexed position; double genu recurvatum; plantar surfaces of feet clearly apposed (talipes varus); six toes on either foot; six fingers on left hand; five on right hand. A hernia the size of a goose egg, and analogous in its nature to the sense of feeling imparted by squeezing a loop of intestine, was situated over region of foramen magnum. A smaller hernia, the size of a hen's egg, situated over region of upper cervical vertebræ. On attempting reduction of larger hernia, smaller one enlarged, and *vice versa*. There was also to be found a circular cleft of hard palate, about midway between alveolar process of superior maxilla, and vault of pharynx, of about the calibre of a thermometer case. Marked abdominal tumefaction. In left hypochondriac region could be felt large, irregular, resisting tumor, possibly a misplaced viscus. Lived about fifteen minutes. No autopsy allowed, but photographs obtained.

Case III. *Birth-mark on Neck.*—Mrs. C——, aged twenty-nine, primipara, about seven months pregnant; consulted me on April 24, 1894, for diffuse cervical phlegmon, at that time unilateral. Palliative measures were resorted to in the hope of checking suppuration, but to no purpose. With considerable diffidence regarding patient's delicate condition, chloroform was administered on April 26th, and an incision made in right cervical region, but without reaching pus of any account. Wound was packed with iodoform gauze, and immediate effect of operation was to diminish tension and swelling of tumor. On morning of April 28th, tension and swelling were much exaggerated over original condition, and diffuse, deep seated adenitis of left side of neck was clearly observable. Symptoms of septicæmia appeared and rapidly progressed; fœtal heart-sound was looked for with negative result. Radical operation was suggested and refused, and a grave prognosis given. On morning of April 29th labor pains came on, and the patient was delivered, within a few hours, of a premature fœtus, presumably dead about forty-eight hours, with a denuded, swollen, circular area about one and one-half inch in diameter in left cervical region and corresponding to the site of the mother's latter formed phlegmon.

Patient went on with a temperature of 105° F., and pulse of 160, and died at 10 P.M. of same day.

Case IV. *Supernumerary Digit.*—Mrs. B——, forty-two years of age, multipara, was delivered on October 4, 1894 of a female child, with last phalanx of a little finger hanging by a slender thread from middle of fifth finger of left hand. Specimen snipped off and here presented. No history of maternal impressions could be elicited.

In reviewing the literature of the subject of maternal impressions, we find recorded, in turn, all phases of monstrosities, some of which will bear recital in an abbreviated form:

1. Anencephalus attributed to maternal impressions: Mother saw while pregnant the body of a man, the top of whose head had been cut off in a railway accident (*University Medical Journal*, Philadelphia).

2. E. Giraud, in the *International Journal of Surgery*, New York, reports a case of anencephalus which lived twelve days, moaning constantly.

3. Same author, and Armstrong, in *London Lancet*, report cases of anencephalus with spina bifida (latter's case, whole length of spinal column), in which mothers were scared by just such sights while two months pregnant.

4. E. T. Shelley, in *New York Medical Journal*, reports anencephalus, born at seven months. Brain was represented by dark mass on child's neck and back; spinal canal open for some distance down back.

5. In *Annual of Universal Medical Sciences*, 1894, is reported a case of occipital meningocele which lived several days without cerebral symptoms.

6. Venables (Halifax) delivered female fœtus, well developed except head. Face depressed, ears not fully developed; calvaria entirely absent; skin covered reddish, pulpy mass, having slight resemblance to brain. Frontal bone rudimentary.

7. Clarke (*British Medical Journal*) also showed monster of this kind, with double genu recurvatum, talipes, and proptosis of one eye.

8. M. M. Brown (*Medical World*, Philadelphia) reports complete spina bifida; absence of occipital, parietal, and frontal bones.

9. J. B. Elkins (*Massachusetts Medical Journal*, Boston) reports case of diaphragmatic hernia; lived one hour. At autopsy, coils of intestine in left pleural cavity, as were also spleen, pancreas, stomach, and entire intestinal tract, with the exception of a small loop of duodenum, ascending colon, and rectum. Left lung collapsed; liver had fallen downward and occupied nearly whole of abdominal cavity.

10. Joseph Collins, in Medical Record, reports a case of complete transposition of viscera in a fœtus, and the same is reported of a girl fourteen years of age.

11. Croon, in *Edinburgh Medical Journal*, reports a case of blind intestine; no viscera; abdomen filled with loose, fibrous tissue.

12. Theresa Bannon in Medical Record, June 23, 1894, reports a case of anencephalus in which spinal cord and nerves as far as eighth dorsal were exposed, all bone development having been arrested in posterior spinal arches; all joints rigid; defective muscular development at umbilicus two inches in diameter.

13. Any number of cases are reported of polydactylism and syndactylism.

I shall endeavor to treat of the several aspects suggested by these cases; of their etiology, in the abstract; of interesting points of diagnosis, with especial reference to Case I.; of their bearing, *pro* and *con*, upon the theory of maternal impressions; of observations regarding said theory; and lastly, as to the duty of the physician toward impressionable, nervous, pregnant women.

And first as to etiology. Psychic impressions, anxiety, grief, fear, have long been looked upon as the sheet-anchor in our translation of the cause of monstrosities. Further, we know that any cause tending to produce separation of the fecundated ovum from uterine mucous membrane, *e.g.*, endometritis, attempts at abortion, etc., to be operative in producing monstrosities. Syphilis is set down as a cause, and hydramnios as, at least, a frequent concomitant. Regarding etiology in the abstract, we learn that even before the ovum reaches the uterus the mucous membrane becomes thickened and vascular, so that its opposing surfaces entirely fill the uterine cavity.

Those changes differ in degree, but not in kind, to those taking place at each menstrual epoch. As a result, a distinct membrane is formed which affords the ovum a safe anchorage and protection until its connections with the uterus are more fully developed. Is it not possible that in such cases as result in monstrosities this change in the mucous membrane is not perfected, and, as a result, we have a barren soil for the development of the ovum? Or again, the decidua serotina, that part of the decidua vera on which the ovum rests, and which, normally, is characterized by its extreme vascularity and serves the purpose of supplying nutriment to the fœtus may be imperfectly developed, and, as a result, an imperfect or anomalous fœtus developed? The fact that psychic impressions are more operative in the first three months of pregnancy, during which time adhesion of decidua vera and reflexa has not taken place, would seem to be corroborative of this view. The division of blastodermic membrane into epiblast and hypoblast, and, later, into mesoblast, being imperfect or irregular from any cause, may operate to the end of an imperfectly developed fœtus, as we learn that these layers have each its

special province in the formation of the fœtus. The epiblastic membrane, going to form just those parts of the fœtus which are more frequently undeveloped in monstrosities must, as a matter of course, be most frequently impaired.

As to the cases in point: Mrs. A——, mentioned in Cases I. and II. had distinct predilection for lower animal tastes. She was much devoted during her first pregnancy to the care of a dog and a pet rabbit, the latter of which was to be frequently seen nestled in her lap or poised on her shoulders. Her friends repeatedly discouraged these attentions on her part, but to no purpose. Regarding her second pregnancy, she studiously eschewed these attentions, and her statement warrants the belief that if impressions were potent, or operative to the end of a monstrous conception, they could only be found in the fact that she was constantly upbraided with her misfortune, and most agreeably informed that she could beget nothing better than a dog.

With regard to Case III. I can only say that patient had considerable misgivings regarding what effect any operation might have upon her as yet unborn child, and that, sick as she was, she apprehended disfigurement of her baby, and inquired immediately upon its birth as to whether it bore any birth marks.

Regarding Case IV., as already stated, no history of maternal impressions could be elicited, save the far-fetched one of an injury to the ankle of one of her other children early in her last pregnancy, about which she was considerably exercised.

Case I. proved a very interesting one in the matter of diagnosis. Upon examination the presenting part, on the one hand, lacked the symmetry and density of the normal globular head; on the other hand, manifested many points of difference from a presenting breech. The jut of tissue arising from the region of the foramen magnum, and referred to in the history of the case, was a very confusing feature. It felt not unlike a prolapsed cord, and feeling more satisfied, at best, that it was a head rather than a breech, and being able to trace and feel its insertion, the thought occurred whether, though never having heard or read of it, a funis could arise from any other situation than that of the umbilicus. The application of the forceps lent only some vague information, for while their easy and perfect fitting made it more certain that a head was engaging, the supposed prolapsed cord, with its point of insertion, came better into the range of the examining finger, and was more confusing and embarrassing than ever. Finally, in despair, I acknowledged my inability to diagnose the condition, and declared to the attendants that the case must be a freak, which in truth, and I take no credit for saying it, proved to be a most admirable diagnosis.

Case II. was immediately diagnosed upon the beginning of labor as a breech presentation. It was born spontaneously and unexpectedly after but a few pains. When born, this fœtus appeared to have considerably more vitality than one reported as Case I.

As to the theory of maternal impressions, there seems to be a general opinion among writers on the subject that a psychic impression is more apt to produce an effect, if of considerable duration; that feelings of anxiety, grief, and fear stand in closer etiological relation to the impression theory than those of joy and delight; that impressions occurring during early pregnancy are more potent in respect to defects of development, while impressions occurring late in pregnancy are more apt to be attended by scars or marks upon the fœtus. Further, the fact of a mother anticipating a defective child, and the statement on the part of a mother made prior to birth of a child, respecting reasons why she might expect a deformed or monstrous fœtus are each given its respective weight in arguments *pro* and *con* upon the plausibility of the maternal-impression theory.

In a table of ninety most remarkable cases, published by Professor W. C. Dabney, of Virginia, in Keating's "Encyclopædia of Diseases of Children," it is observable that a very large majority of cases are referred to the early period of pregnancy.

Regarding cases in aforesaid table which can be deemed in any way correlated to those mentioned in this paper, we find that Case IX. is that of a mother frightened by a rabbit—child born with hare-lip; two subsequent children normal.

Case LXXXV., mother frightened by a pet squirrel attempting to bite her. Child born with compact mass of hair extending from eyebrows over head and back, and closely resembling a squirrel. Also two well developed incisor teeth. Case XC., wherein child was born dead, with large, fresh-looking blebs corresponding in site to extensive burns mother had received thirty six hours prior to birth of child, shows considerable parallelism to Case III. of this paper, both as regards necessary brevity of impression and the fact of scar or mark rather than defect of development.

Regarding Anticipation on the part of Mother.—In Cases I., II., and IV. mothers did not expect defect. In Case III. mother did apprehend birth mark.

Regarding Duration of Impression.—In Cases I. and II. probably long. In Case III. not longer than seventy-two hours.

Regarding Circular Cleft of Palate.—Embryologists say that superior maxillary processes of first branchial arches come together during the first eight or ten weeks of fœtal life, and at the ninth week, or soon afterward, the hard palate is closed, and on it rests the septum of the nose. So that if Case II. is to be explained on the theory of maternal impressions, such impression must have taken possession of patient early in pregnancy in order to account for circular cleft of palate.

Dr. W. T. Taylor, of Philadelphia, has reported the case of a lady who gave birth to five children in succession, each of whom had cleft palate. In the first instance defect was attributed to maternal impression. And as defect was slighter in each successive child, it is supposed impression was gradually effaced. And right here is a point regarding Cases I. and II. Case II. being doubtless nearer normal than Case I., can we find the reason for it in the fact of a less intense causative principle in the latter pregnancy, of a less impressionable nervous organization on the part of the patient?

The theory of maternal impressions, from the literature of the subject, may be summarized or epitomized, without any claim to original observation, as follows:

Maternal Impressions.—*A.* (1) Are responsible for fœtal defects, or (2) are not responsible. *B.* (1) If responsible, then it must be shown that impression was made at a period of pregnancy, antedating developmental period of deformed part. (2) If not responsible, then all deformities are due to errors of development. *C.* Judgment dictates latter premise untenable, as many marks doubtless occurred late in pregnancy, when development was practically complete. *D.* Long impressions more apt to influence fœtus. Short impressions less apt to influence fœtus.

Fœtal Defects.—*A.* Mental: Due to emotional disturbances; as to how caused, we know absolutely nothing. As to frequency, only six out of four hundred and forty-three cases made out in a certain statistics. *B.* Bodily: Vascular, supposedly most frequent, doubtless very frequent, but often overlooked.

In conclusion, what can be the practical import of these, or any other observations upon the subject at issue?

It seems to be the concensus of opinion that one cannot go far wrong by assuming it to be his duty to discourage morbid reflection, worriment, or apprehension of defective progeny in the minds of nervous, impressionable, pregnant women. If the minds of our pregnant patients are schooled in the aversion of voluntary, catastrophal sightseeing, are taught that it is rather the prolonged impression that is more operative for harm, it is just possible that monstrous conceptions might be a less frequent misfortune.

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AN ATTACK ON THE DIPHTHERIA ANTITOXIN.

A PAPER of the greatest interest and importance was read at a recent meeting of the Berlin Medical Society, by Dr. Hansemann. The paper carries especial weight because the author is announced as an assistant of Professor Virchow's, and his work and conclusions are presumably endorsed by the dean of modern pathology.

Dr. Hansemann comes out in flat contradiction of the alleged properties and powers of the Behring immunizing serum. He asserts that in Bretonneau's diphtheria the Loeffler bacillus is not always present, and is not its sole cause. This view will appeal to some clinicians and bacteriologists at least, for it is admitted that the Loeffler bacillus is present in some very mild cases of diphtheria as well as in apparently healthy throats, while, on the other hand, it is also known that a streptococcus diphtheria (or sore throat) is sometimes extremely severe and dangerous.

Dr. Hansemann asserts that Loeffler's bacillus is found constantly in rhinitis fibrosa, without producing diphtheria, and that these alleged pathogenic microbes may multiply in the throat without modifying the course of the diphtheria. All this, we believe, will have to be admitted by pathologists who have without bias studied the disease. Dr. Hansemann asserted further that in the case of animals an injection of a Loeffler bacillus culture caused not diphtheria, but a disease *sui generis*, the Loeffler bacillus disease; that epidemic diphtheria had never been observed in animals; that guinea-pigs, in contact with diphtheria patients, had never taken diphtheria; but that a case is known where a cat, with which a child suffering from diphtheria had played, had developed all diphtheria symptoms, without, however, any Loeffler bacilli being discoverable.

He then proceeded to describe the three qualities claimed for the antitoxin—namely, its therapeutic action, its harmlessness, and its immunizing power. He said that the present statistics give an erroneous impression (as already shown by Gottstein in his recently published pamphlet), as many children suffering from lighter forms of throat complaints are now sent to the hospitals to be treated with serum, thus swelling the proportion of cured cases, which would, he said, otherwise not be higher than the usual average. He said that the serum injections could by no means be considered harmless, as affections of the kidneys had frequently followed—in one case more severe in type than had ever yet been observed after diphtheria. He said that it was clear, from Behring's new directions to increase the immunizing dose from sixty to one hundred and fifty unities, that no results have yet been achieved as far as immunizing goes.

The final criterium of the efficacy of the antitoxin treatment is clinical experience. Even if Hansemann's pathology is correct, therefore, it will make no difference provided the diphtheria patients get well.

The difficulties in estimating exactly the value of a new therapeutic procedure which comes loudly heralded and solidly endorsed are very great. Unusual attention is paid to every patient, greater watchfulness, more thorough supervision, and earlier diagnosis and treatment are always found. These factors must all be considered in estimating the results of the serum treatment.

It would be not only a disappointment to all well-wishers of humanity, but would be a serious blow to the rising prestige of medical science, if, after all, the serum treatment should fall short of its high expectations.

EVERY MAN HIS OWN EDITOR.

IT is a well-known fact that many large business firms publish a special journal to advertise their particular line of industry. These journals are all printed by the same house and contain the same articles, but differ in the title-page, being in one city *Brown & Co.'s Monthly*, in another *Smith & Co.'s Magazine*, etc.

According to the *Medical News*, an attempt to foist this ingenious product of modern journalism upon the medical profession is being made. A circular containing the propositions made gives these interesting details:

"First, we will get out a journal in every way as good as the one you have in hand each month, in size, quality, etc. We will allow you one page to be filled with your own items of interest relating to your own doings, those of your patients, friends, and institution, or whatever you may choose. We will carefully eliminate the word ——— from the journal. Instead of it being called the —— *Medical Journal*, as now, you may give it any name you choose, as the *Grand View Sanitarian*, or *The Lewiston Medical Reporter*, or whatever seems appropriate to you for your location and institution. In the space now used for our motto, 'A magazine for the doctor and his family,' we will print your name as local editor, publisher, or whatever you wish.

"We shall be glad to have at any time short articles of practical value and general interest from yourself or colleagues for publication in the body of the journal, which we will insert as we find opportunity.

"In return it is hoped you will take at least one hundred copies of the journal each month at $6 a hundred, additional copies to be furnished you at the rate of 5 cents each. In no case can less than 100 copies be sent. The pay in each instance must accompany the order, and also copy for your local news page, and be received at the home office by the 15th of each month. The price we have made you is cost. (No publishing house in the country could get you up exclusively 100 such journals as ours for less than $225.) We are able to make this price to you only on account of the great

number we issue. Our pay comes through our advertising columns, which are valuable and appreciated.

"The gain to be derived by you taking hold of this enterprise is great, we believe, beyond all proportion of the cost. In the first place, it binds you to nothing. You are at liberty to stop whenever you choose. You may secure subscribers to your journal in your own town and county. It will be worth more than the regular price and make it pay for itself in dollars and cents. You can send other copies to desirable parties with your compliments and attention, which will win and hold their regard. Other copies left with your druggist for judicious distribution will be like bread cast upon the waters. But undoubtedly the greatest benefit of all will be the prestige that your connection with such a journal will give you and your institution wherever it goes.

"In short, there is no end to the usefulness to which doctors may and do put their journals. Please give this matter the careful attention its importance merits.

"Very truly yours,

"The ——— Medical Journal Co.,

"———, *Manager.*

"P. S.—In case you do not care to furnish copy for local page at any time, a notice with cut of your institution can occupy the space very effectively."

This plan, as will be seen, enables every doctor to have his own journal if he wishes.

We do not think, however, that it will succeed, and hence spare our readers any elaborate comments. The trouble will lie in the fact that all medical journals appeal to the same class of readers, and the appearance of syndicate journals will soon be detected and exposed.

MOUTH HYGIENE.

The care of the patient's teeth is a matter too often neglected by the medical adviser, principally, no doubt, because of the important position the dentist now occupies in relation to every well-to-do family. The vast majority, however, of those seeking medical advice never go near a dentist unless for the purpose of having a root extracted. School children, the inmates of homes, asylums, prisons, and even hospitals are shamefully neglected in this particular. In most public institutions not only is the tooth-brush unknown, but it is almost an impossibility to secure proper cleansing of the teeth even in those taking mercury, for instance, where the danger of salivation is much increased by this neglect. Many institutions have gentlemen of the dental profession connected with their boards, but the teeth are much more apt to be overlooked than any other portion of the economy, and their every-day toilet slighted. It is, indeed, not an uncommon experience to find those who in health never omit the morning brush, go for days and weeks together without proper mouth-cleansing when they are sick—the time above all others when the brush is most required. Of course, if the patient is too ill an antiseptic mouth-wash may replace it in a measure. A little volume of popular essays on the care of the teeth and mouth has just been published by Victor C. Bell, A.B., D.D.S., and we mention it here, not because of any new ideas or theories it embodies, nor because of its literary merit or beauty of illustration, for many things are more attractive than casts of irregular teeth and pictures of false sets. Such information as it contains, however, is most important for all to know, and if the advice given were followed many a pain would be spared and many a tooth saved.

The proper care of the teeth of school children is receiving more attention in England than it formerly did, and no little credit is due to Dr. Cunningham, of Cambridge University, for his efforts in behalf of school-children's teeth and his contributions on this subject to the Seventh International Congress of Hygiene and Demography, and his essay on oral hygiene, for which he was awarded the gold medal prize at the International Dental Congress held in Chicago during the World's Fair.

This gentleman says that parents and schoolmasters pay so much more attention to the quality of the child's food than they do to an efficient dental mechanism for its mastication, because of their ignorance of its importance and of the advantages, both economic and educational, to be derived from adequate attention to the teeth.

In speaking of tooth powders he says, "The principal action should be mechanical rather than medicinal. The powder should be very finely grained and should contain no cuttle-fish powder, no powdered oyster-shells, no pumice powder. It should consist of alkaline substances and contain no acid ingredients, nor such as are capable of changing to acid in the mouth. All fermentable substances such as carbo-hydrates are contra-indicated." He agrees with Miller, that precipitated chalk should form the basis of a powder, and also recommends a dash of neutral or slightly alkaline soap. He also considers a tooth-soap preferable to tooth-powder.

The physician needs not to be told how great is the necessity to the economy of sound teeth, nor need we enumerate the pathological conditions traceable to their decay; but all must admit and regret the shocking lack of general information upon this important subject, and the need for instruction, especially in the schools. We commend therefore the diffusion of knowledge concerning teeth, and if the woodcuts of artificial upper dentures, interdental splints, cleft palates, obturators, and drills contained in Dr. Bell's book will have the effect of frightening people into an early visit to a dentist, and if infants will gaze upon irregular dentition as depicted upon page 61, and never after suck their thumbs, much will have been gained for the cause of mouth beauty as well as mouth purity.

HOSPITAL STAFFS AND MANAGING BOARDS.

The recurrent irritation between medical boards of hospitals and the trustees shows, if nothing else, that there is something wrong in the system as it usually exists. We do not say that medical boards are always right and lay trustees always wrong, but we do assert that a method of management that provokes constant quarrelling and outbreaks of ill-feeling is seriously at fault.

In our opinion the fault lies chiefly in the fact that the medical staffs are not allowed sufficient share in the management. In some hospitals their advice is asked only as a matter of form, and the rules absolutely forbid any physician being a member of the managing board. The capacity of physicians to manage their executive and or-

ganizing skill, have been, we are sure, much underrated. Few men who attain that large success which gives to them hospital positions, do not possess considerable business capacity. When this is combined with technical knowledge, it makes the physician a person whose counsel is eminently valuable in directing the management of a great hospital.

If this fact were better known and more wisely appreciated, we should not have a hospital scandal every year, to fret the soul and disturb the serenity of academic discussions.

We refer to this now because Philadelphia has just been much disturbed by hospital controversies. The *Medical News* of December 8th describes a "flagrant instance of the outrageous impertinence of laymen, in their office of hospital trustees, in disposing of the services of physicians in a dictatorial and unjust manner."

The protest of the *News* had little effect, for in its issue of December 22d it says: "We little expected that a more striking illustration of the same spirit would so soon be shown, as happened the next week in Philadelphia. A member of the visiting staff of a great hospital was displaced ignominiously and without warning, without an official charge being made against him, or an official opportunity being offered him for replying to possible charges. Not even an official notice was sent him of his summary dismissal. From newspaper reports one learns that the reasons for this remarkable proceeding were that the physician thus contemptuously treated, in order that he might obtain blood from the patient's finger for purposes of diagnosis and investigation, had not given quinine to a patient so soon as he might have done."

ONLY IMPORTED ANTITOXIN EFFECTIVE.

By resolution of the New York City Board of Health, Drs. T. Mitchell Prudden, and Herman M. Biggs, were requested to "prepare and submit some plan for the determination of the strength and purity of the various preparations of antitoxin which are now, or may be hereafter, offered for sale in the city of New York, so that the public may have some guarantee that only genuine preparations of antitoxin of proper strength are furnished for sale."

In response to this request a report was made to the Board of Health, in which it was stated essentially that no trustworthy antitoxin is as yet manufactured in this country.

They assert that it is of the utmost importance to those who use this remedy that there should be some reliable guarantee, for every preparation placed upon the market, that it has been prepared by competent persons, and that in every case it possesses the requisite purity and power. The preparations now occasionally furnished in this country, in small quantity, by the German pharmaceutical houses, Schering and the Farbwerke (Hochst-am-Main). have specific guarantees as to strength and purity by bacteriologists of universally recognized skill and experience. Unless some such security is afforded, it would be quite easy for unscrupulous persons willing to commit such a crime, to place on the market small bottles of yellowish fluid labelled "antitoxin," containing an inefficient amount of the healing agent, or even none at all, and for a time at least profit by the extraordinary demand for it, perhaps at the cost of life and at the risk of discrediting a most potent and beneficent remedy.

That this is not a merely fancied and only possible menace to the welfare of those stricken with this dreaded disease, and so often the wards of the Department of Health, is shown by the fact that already in the city of New York several different preparations of alleged diphtheria antitoxin, said to have been prepared in this country, and wholly, so far as we can learn, without proper guarantee of efficiency, have been furnished and used for the treatment of diphtheria. One of these preparations has been already subjected to the necessary crucial tests by the Department, and found wholly inefficient and inert.

It is not stated whether tests were made of the imported articles.

DR. CONAN DOYLE IN CHICAGO.

No visitor to this country has received warmer hospitality or treatment more fully commensurate with his reputation than Dr. Conan Doyle. We trust that he is not responsible therefore for circulating stories reflecting on the intelligence and even vanity of his hosts. The *British Medical Journal* publishes the following somewhat weird tales of the doctor's Chicago experiences:

"He was," says the *Journal*, "introduced to the leading literary club of Pigstickopolis as 'Canon' Doyle. This led to his being mistaken for an ecclesiastical dignitary, and at a breakfast given in his honor the creator of 'Sherlock Holmes' was considerably taken aback by being invited to 'ask a blessing.' He is also said to have been overwhelmed with requests to preach in half the churches of Chicago. He was deluged with letters addressed to the 'Rev. Dr. Doyle,' 'Rev. Canon Doyle,' 'Very Rev. Canon Doyle,' and, finally, by swift promotion, 'Right Rev. Dr. Doyle.' To add to the tribulations of the distinguished writer whom we are still proud to claim as a professional brother, though he has definitively exchanged the lancet for the pen, he has been mistaken for the creature of his own imagination, and it is said was actually invited by the Mayor of Chicago to enter the service of the municipality as Chief of the Detective Police. Such are some of the penalties of fame."

The Philadelphia Board of Charities and Correction has appointed Dr. Hobart A. Hare a member of the staff of physicians at the Philadelphia Hospital, in place of Dr. Judson Daland, who has been dropped. The reason given for this action on the part of the board is, that Dr. Daland is alleged to have allowed certain patients suffering from malaria to go untreated for a certain length of time in order that he might study the development of the peculiar organism which produces malaria. To a board capable of such action for such reasons it probably makes very little difference what criticisms may be made upon its action, but we think it likely that the medical profession and the medical press will not rest content without knowing more and saying something about such a policy.—*Boston Medical and Surgical Journal.*

News of the Week.

The Death of Dr. George A. Peters.—The following resolutions were passed December 7, 1894, by the Medical Board of St. Luke's Hospital. "After many years of faithful and distinguished service as Attending and Consulting Surgeon of St. Luke's Hospital, the career of our honored colleague, Dr. George A. Peters, has come to its inevitable close. His career has been more intimately, and for a longer period, identified with the history of this hospital than that of any surgeon ever connected with its staff. Dr. Peters was appointed an attending surgeon on the organization of the first medical staff of the hospital in March, 1859. He retired from active service in December, 1863. He was consulting surgeon until January, 1872, when he was reappointed on the attending staff and again retired from it in December, 1887. From that time until his death he was consulting surgeon, and President of this Board. During the entire period of the existence of this Hospital, therefore, Dr. Peters gave to it his best energies and his loyal service. For twenty years he performed active service in the wards, and for fifteen years he gave to his colleagues the benefit of the ripe judgment which was the fruit of his large experience. In his personal and professional relations to his associates and subordinates, Dr. Peters always commanded confidence and respect. Toward his patients his conduct was marked by a cheerful and sympathetic spirit, and by a quaint and characteristic humor which often dispelled gloom and inspired courage. His work as a physician and surgeon, both in public and private practice, was distinguished by a singularly keen perception and alert intelligence, by remarkable readiness in resources, by practical common sense, and above all, by an earnest purpose, at any sacrifice of time and strength, to help those who sought his skill and counsel. The long and intimate association of Dr. Peters with the administration of St. Luke's Hospital will endear his memory to the managers, and to his colleagues of the Medical Board. In the history of this institution, no one has earned more truly the commendation and the reward promised to 'the good and faithful servant.'

"Signed, W. H. Draper, M.D.,
"Robert Weir, M.D.,
"*Committee.*"

Dr. Thomas R. Norris died suddenly on Friday, December 21st, at his home, 106 Pennsylvania Avenue, Brooklyn, in his sixty-third year. He came to this country from Ireland when he was a boy. He became prominent in the Democratic organization in Brooklyn, and served as Coroner, Commissioner of Charities, and Superintendent of the Poor.

An Outbreak of Rabies.—Sixteen persons were bitten by a mad dog in Salem, N. J., recently. Six of them have been put under treatment at the New York Pasteur Institute. Of ten bitten persons three were found to be uninjured owing to the protection afforded by clothing.

Bacteria in Railway Cars.—Investigation of the atmosphere of English railway coaches shows that there are sixteen thousand microbes to the cubic inch in the first class, thirty-four thousand in the second class, and seventy-eight thousand in the third-class compartments. There is a suspicion that the railroad managers have prompted these statistics in order to check the waning popularity of the expensive classes.

Physicians Strike.—The physicians of the city of Newburgh, forty in number, and of the town of Cornwall, recently met and passed resolutions which they presented to the Orange County Board of Supervisors, in session at Goshen, in which they demand that the scale of prices fixed by the Board for attendance of physicians at coroners' inquests be increased from $5 to $10 for post mortems and for autopsies from $15 to $30. Drs. Wooley and Jova, a committee representing the physicians, appeared before the Board of Supervisors yesterday and stated that under no circumstances would the physicians act unless the prices demanded be paid. The Board refused to raise the rates, claiming that the price established is good pay, and that it would be unfair to the physicians of other parts of the county to pay more to those from Newburgh and Cornwall. The Newburgh Coroner will be compelled to employ a doctor from one of the county towns not in the combine at future inquests. An effort was made to get all the physicians in the county to organize in the strike, but it did not succeed. Coroners' inquests are very expensive in Orange County, and cost the tax-payers from $5,000 to $7,000 a year, while the State of Massachusetts, under a different system, is taxed but little over three times as much per year for inquests as this county. Yesterday the Supervisors passed a resolution requesting Senator Lexow and the two Orange County Assemblymen to advocate the abolition of the office of Coroner by the Legislature, as provided by the amended Constitution, and to adopt a more modern and economical system.

Antitoxin Legislation in France.—The Paris correspondent of the *Medical Press* writes (November 28th), that, in view of the danger to the public likely to arise from the uncontrolled manufacture and sale of curative serums and antitoxin, the French Government is invited to incorporate in the bill Regulating the Practice of Pharmacy, a section specially dealing with this class of remedies. In order to ensure that the horses employed in the preparation of serum are perfectly healthy, and generally to provide for the requisite skill and care being brought to bear, the following clauses are proposed: That attenuated virus, therapeutical serum, modified toxines, and similar products intended to be used in the prophylaxis or treatment of contagious diseases, can neither be sold nor distributed gratuitously without a personal permit to be accorded by the Government on the advice of the Council of Public Health and the Academy of Medicine, such permit to be temporary, and its maintenance to be subject to the result of periodical inspections by a special commission. The products in question are to be sold exclusively by duly qualified pharmacists, and each phial is to bear the source and date of the preparation. Provided always (as the lawyers say) that these regulations will not be held to apply to Jennerian vaccine, whether human or animal.

The Value of Pancreas Extract in Diabetes.—Dr. P. Watson Williams, of Bristol, England, reports three cases of diabetes treated with extract of pancreas, and he thinks that practically nothing can be accomplished by this mode of treatment as at present employed.

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